CVP-M1
RMT-M1

SERVICE MANUAL

US Model

SPECIFICATIONS

Printing system — Sublimation heat transfer printing

Number of picture elements
448 (V) x 708 (H) dot (for full-size printout)

Printing size — 79 (V) x 109 (H) mm (3 1/4 x 4 3/8 inches) (for full-size printout)

Total gradation — 256 levels (8 bits)

Printing time
Standard size printing:
Approx. 60 seconds per sheet
Half size printing:
Approx. 85 to 100 seconds per sheet

TV signal — NTSC color system, EIA standard

Input/output connectors
INPUT VIDEO (NTSC composite video signal) input
Phono connector x1
1 Vp-p, 75 ohms (unbalanced), sync negative
INPUT S VIDEO (separate luminance (Y) and chrominance (C) signals) input
Mini DIN 4-pin connector x1, automatically selectable
Y: 1 Vp-p, 75 ohms (unbalanced), sync negative
C:0.28 Vp-p (color burst) 75 ohms (unbalanced)
MONITOR OUT (NTSC composite video signal) output
Phono connector x1
1 Vp-p, 75 ohms (unbalanced), sync negative
LANC — Stereo mini-mini jack x1

Video Print Cartridge and Video Print Paper
Video Print Cartridge for regular and sticker print paper for use only with PRINTERS bearing the VP trademark.
Video Print Paper for use only with PRINTERS bearing the VP trademark (100 x 140 mm (4 x 5 5/8 inches) sheets)

Power requirements — 120 V AC, 60 Hz

Power consumption — 100 W (when printing), 13 W (when not printing)

Operating temperature — 5°C to 35 °C (40°F to 95 °F)

Operating humidity — 20% to 80%

Dimensions — Approx. 260 x 106 x 364 mm (w/h/d, excluding protruding parts) (10 3/8 x 4 1/4 x 15 1/4 inches)

Mass — Approx. 3.8 kg (9 lb 15 oz)

Supplied accessories
AC power cord (1)
Remote commander (1)
Size AA (R6) battery for remote commander (2)
Video connecting cable (1.5 m) (5 feet) (1)
Video print pack for trial use (1)
- Regular print paper (15 sheets)
- Sticker print paper (10 sheets)
- Video print cartridge (1 cartridge for 25 prints)

Design and specifications are subject to change without notice.

MICROFILM

COLOR VIDEO PRINTER

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

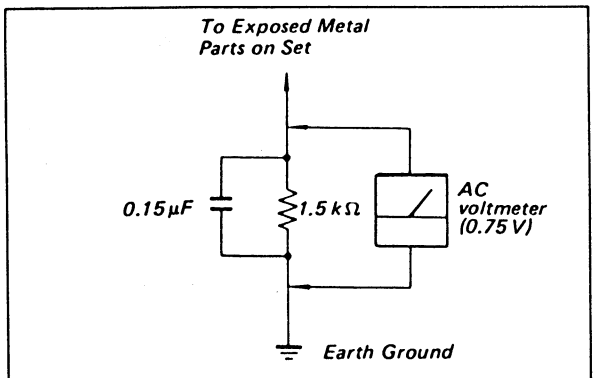


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

TABLE OF CONTENTS

1. GENERAL

Getting Started
- Inserting the ink (print cartridge) ····· 1-1
- Inserting the print papers ····· 1-1
- Hooking up ····· 1-2
- Checking the connections ····· 1-3

Printing
- Printing a full-size picture ····· 1-3
- Printing half-size pictures ····· 1-4
- Printing 1/4-or 1/16-size pictures ····· 1-5
- Making multiple prints ····· 1-5

Other Print Options
- Printing with a calender ····· 1-6
- Printing on sticker papers ····· 1-6
- Creating a video cassette label ····· 1-7
- Cropping a picture ····· 1-7
- Combining several pictures ····· 1-8
- Adjusting the picture ····· 1-8

For Your Information
- Precautions ····· 1-9
- Troubleshooting ····· 1-9
- Index to parts and controls ····· 1-10

2. DISASSEMBLY

2-1. UPPER CABINET BLOCK ASSEMBLY REMOVAL ····· 2-1
2-2. KY-30, KY-31 BOARDS REMOVAL ····· 2-1
2-3. POWER BLOCK, M901 REMOVAL ····· 2-2
2-4. TRAY GUIDE BLOCK ASSEMBLY, JACK COVER REMOVAL ····· 2-2
2-5. AD-32 BOARD REMOVAL ····· 2-3
2-6. RIBBON DOOR, CASSETTE GUIDE REMOVAL ··· 2-4
2-7. M903 REMOVAL ····· 2-4
2-8. MOTOR BRACKET REMOVAL ····· 2-5
2-9. RIBBON MOTOR ASSEMBLY REMOVAL ····· 2-5
2-10. HEAD DRIVING BLOCK ASSEMBLY REMOVAL ····· 2-6
2-11. HEAD DRIVE MOTOR ASSEMBLY REMOVAL ··· 2-6
2-12. TOP PLATE BLOCK ASSEMBLY REMOVAL ··· 2-7
2-13. CASSETTE GUIDE (1) BLOCK ASSEMBLY, PREPARE PAPER BLOCK ASSEMBLY REMOVAL ····· 2-7
2-14. HEAD BLOCK ASSEMBLY, HEAD POWER CAM BLOCK ASSEMBLY REMOVAL ····· 2-8
2-15. NAMES OF MAIN PARTS ····· 2-9
2-16. LOCATIONS OF SENSORS ····· 2-9
2-17. CIRCUIT BOARDS LOCATION ····· 2-10

5. REPAIR PARTS LIST

5-1. EXPLODED VIEWS ····· 5-1
- 5-1-1. MAIN UNIT ····· 5-1
- 5-1-2. MECHANISM DECK-1 ····· 5-2
- 5-1-3. MECHANISM DECK-2 ····· 5-3
- 5-1-4. MECHANISM DECK-3 ····· 5-4
- 5-1-5. MECHANISM DECK-4 ····· 5-5
- 5-1-6. MECHANISM DECK-5 ····· 5-6

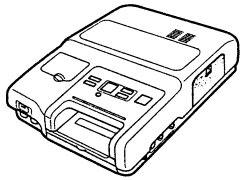
5-2. ELECTRICAL PARTS LIST ····· 5-7
- AD-32 board ····· 5-7
- CA-54 board ····· 5-19
- CO-24 board ····· 5-19
- HM-25 board ····· 5-19

HP-90 board ·····5-19
JD-1 board·····5-19
KY-30 board ·····5-19
KY-31 board ·····5-20
LD-79 board ·····5-20
MK-12 board·····5-20
PE-18 board ·····5-20
PJ-74 board ·····5-21
PP-14 board ·····5-21
RM-72 board·····5-21
TR-74 board ·····5-21
TS-147 board·····5-21
TS-148 board·····5-21
VR-56 board ·····5-21
POWER BLOCK ·····5-21

7. ELECTRICAL ADJUSTMENT

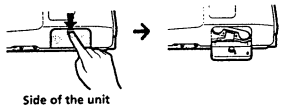
7-1. MECHANICAL ADJUSTMENT·····7-1
1. Thermal Head Replacement ·····7-1
7-2. ELECTRICAL ADJUSTMENT ·····7-2
2-1. PREPARATIONS BEFORE ADJUSTMENT ···7-2
2-1-1. Equipment Required·····7-2
2-1-2. Equipment Connection·····7-2
2-1-3. Checking the Input Signal ·····7-3
1. S VIDEO Input Signal ·····7-3
2. VIDEO Input Signal ·····7-3
2-1-4. Service Mode ·····7-4
1. Setting the service mode·····7-4
2. Service LANC memory map ·····7-4
3. Bit value discrimination ·····7-5
4. Key input mode check ·····7-6
5. Downloading test pattern signal to memory ·····7-6
6. Checking if communication with mechanism controller is normal·····7-7
7. Mechanism controller A/D port check ·····7-7
8. Ribbon code read-out check ·····7-7
9. Head motor check ·····7-8
10. Ribbon motor (roller motor) check·····7-9
11. Head control check ·····7-9
12. Platen motor (stepping motor) check ·····7-10
13. Fan motor check ·····7-10
14. Page F address list ·····7-11
2-2. POWER SUPPLY ADJUSTMENT ·····7-13
1. Power supply voltage check (AD-32 board) ·····7-13
2. ANALOG 6.7V voltage adjustment (Power supply block) ·····7-13
3. Head Voltage Adjustment (Power Supply Block)···7-14
2-3. VIDEO CIRCUIT ADJUSTMENT ·····7-15
1. Page F initial value input ·····7-15
2. Sync detection level adjustment (AD-32 board)···7-15
3. Free run frequency adjustment (AD-32 board) ···7-15
4. 910fH adjustment (AD-32 board) ·····7-15
5. AGC level adjustment (AD-32 board) ·····7-16
6. V REF adjustment (AD-32 board) ·····7-16
7. Y-C separation Y level adjustment (AD-32 board)···7-16
8. Y-C separation CHROMA level adjustment (AD-32 board)·····7-16
9. Color level offset adjustment1 (AD-32 board) ···7-17
10. HUE level offset adjustment1 (AD-32 board) ···7-17
11. White balance adjustment (AD-32 board) ·····7-17
12. Color level,HUE level offset adjustment2 (AD-32 board)·····7-18
13. Sync level adjustment (AD-32 board) ·····7-18
2-4. LAYOUT DIAGRAMS FOR ADJUSTMENT RELATED PARTS·····7-20

Inserting the ink (print cartridge)



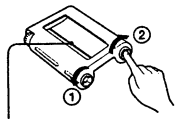
Insert the video print cartridge with the VP mark according to the steps below.
Use only the video print cartridge supplied with the video print paper packed in the same carton.

1 **While pressing down the lever, open the cartridge compartment lid.**



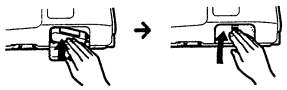
Side of the unit

2 **Wind up the ink ribbon to remove the slack.**



Remove any slack (①). Then, while pressing the center of the reel, wind the ink ribbon until the black bar appears on the left (②).

3 **Insert the print cartridge firmly and close the cartridge compartment lid.**

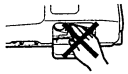


If the cartridge compartment lid does not close

Remove the print cartridge, and then reinsert it.

Caution

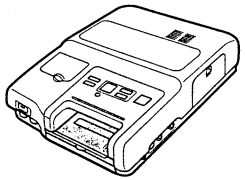
Never put your hand into the cartridge compartment. The thermal head reaches high temperatures, especially after repeated printing.



Notes

- When you put the print cartridge down, stand it as illustrated so that dust will not get on the ink ribbon.
- Do not touch the ink ribbon or place the print cartridge in a dusty location. Fingerprints or dust on the ink ribbon may result in imperfect printing.

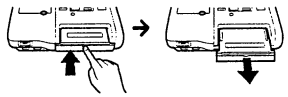
Inserting the print papers



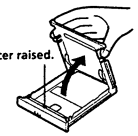
You can insert up to 25 sheets.

1 **Push the paper tray.**

The paper tray comes out from the printer.



2 **Open the lid of the paper tray and make sure that the spacer is raised.**

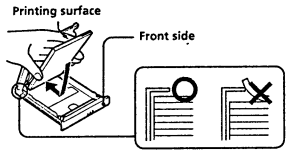


Keep the spacer raised.

3 **Shuffle the print papers to prevent them from sticking together.**

4 **Check that the corners of the print papers are not bent, then set the papers in the paper tray with the printing surface facing up.**

The paper tray holds up to 25 sheets.
Do not set different types or sizes of papers in the tray at the same time.



Make sure that the print paper is placed below the paper holder.

5 **Close the lid and push the paper tray back into the printer.**

Notes

- Do not touch the printing surface (the side where nothing is printed).
- Do not place print papers in a dusty location. Fingerprints or dust on the printing surface may result in imperfect printing.
- Use the print paper recommended for this printer only. If you use a different type of paper, it may cause problems and the printer may not print properly.

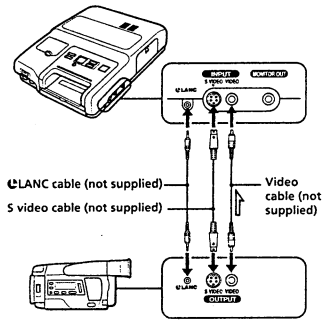
This section is extracted from instruction manual.

Hooking up

Connecting to a camcorder

Connect your camcorder to play back the tape you want to print from. Then, connect a TV so that you can monitor the pictures to be printed.

1 Connect the printer's INPUT: VIDEO to the camcorder's VIDEO output jack, using a video cable (not supplied).



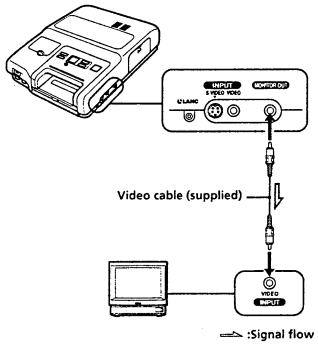
If your camcorder has an S VIDEO output connector

Connect the printer's INPUT: S VIDEO to the camcorder's S VIDEO output connector, using the S VIDEO cable (not supplied). This connection results in better print quality.
If you use both S VIDEO connector and VIDEO jack simultaneously, the printer automatically selects the S VIDEO input as the input video signal.

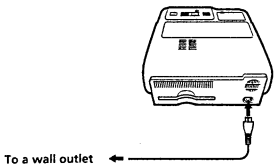
If your camcorder has a LANC jack

Connect the printer's LANC to the camcorder's LANC jack, using the LANC cable (not supplied). The printer automatically stops the camcorder when you select the picture on the printer.
Note that the LANC jack on this printer does not correspond to CONTROL L or REMOTE jacks.

2 Connect the printer's MONITOR OUT to the TV's VIDEO input jack, using the supplied video cable.



3 Connect the supplied AC power cord to AC IN of the printer and a wall outlet.



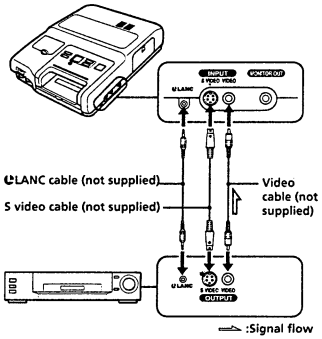
Note

You cannot use a television with an antenna input only.

Connecting to a VCR

You can also print from a VCR or laser disc player. Connect your VCR (or laser disc player) as follows:

1 Connect the printer's INPUT: VIDEO to the VCR's VIDEO output jack, using a video cable (not supplied).



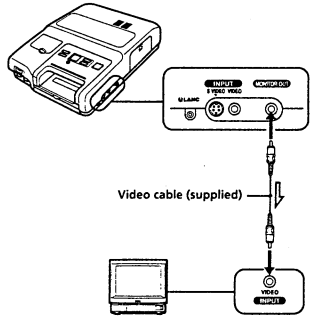
If your VCR has an S VIDEO output connector

Connect the printer's INPUT: S VIDEO to the VCR's S VIDEO output connector, using the S VIDEO cable (not supplied). This connection results in better print quality.
If you use both S VIDEO connector and VIDEO jack simultaneously, the printer automatically selects the S VIDEO input as the input video signal.

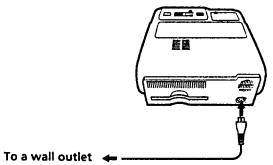
If your VCR has a LANC jack

Connect the printer's LANC to the VCR's LANC jack, using the LANC cable (not supplied). The printer automatically stops the VCR when you select the picture on the printer.
If your VCR has the LANC M/S mode switching function, set to "S" mode.
Note that the LANC jack on this printer does not correspond to CONTROL L or REMOTE jacks.

2 Connect the printer's MONITOR OUT to the TV's VIDEO input jack, using the supplied video cable.



3 Connect the supplied AC power cord to the AC IN jack of the printer and a wall outlet.



Note

You cannot use a television with an antenna input only.

(continued)

When you want to print TV programs

If your VCR has a built-in TV tuner, you can make prints of the TV programs without recording them onto the tape.

1 Connect the printer to the VCR and TV as described on the previous page.

2 Set the TV's input selector to video input.

3 Press the VCR's channel selection button so that the program you want appears on the TV screen.

4 Print the picture.
For details, see the following pages.

Note
If you use a VCR that does not have a TV tuner, you cannot print TV programs directly.

Checking the connections

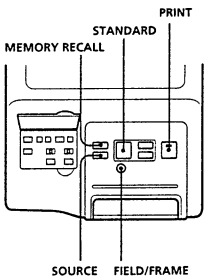
Check the connections you've made by playing back the tape on the camcorder (or VCR).

1 Turn on the power of the printer, camcorder and TV.

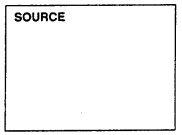
2 Set the TV's input selector to video input.

3 Start playing back the camcorder (or VCR).
The playback picture appears on the TV screen. If not, make sure you've made connections correctly and securely.

Printing a full-size picture

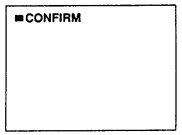


1 Start playing back the camcorder.
The playback picture appears on the TV screen.



"SOURCE" appears.

2 Press STANDARD when the picture you want to print appears on the TV screen.



"CONFIRM" appears.

3 Press FIELD/FRAME if the designated picture is blurred.

4 Make sure that "CONFIRM" appears on the TV screen, then press PRINT.
The designated picture disappears and printing starts.
When printing ends, the designated picture appears on the TV screen again and a print emerges from the print outlet.

5 Remove the print from the printer.

To re-designate the picture before printing

Press SOURCE so that the playback picture appears on the TV screen. When the desired picture appears, press STANDARD.
The newly designated picture is stored to print instead of the previous one.

(continued)

To check the designated picture while the playback picture appears on the TV screen

Press MEMORY RECALL. The designated picture appears on the TV.
The designated picture is stored until you designate a new picture or turn off the printer.
To return to the playback picture, press SOURCE.

To print the designated picture again

Make sure that the desired picture is still on the TV screen, then press PRINT again.
You cannot use any printer's button except PRINT CANCEL while printing.

The camcorder automatically pauses when you press STANDARD

(If you connect the printer to the camcorder using the LANC cable)
When you press SOURCE, playback starts automatically again. However, if about 5 minutes pass after you press STANDARD, the camcorder stops playback.

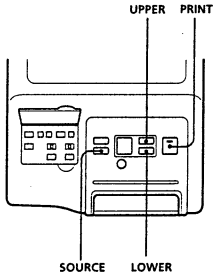
Note
To avoid malfunction, do not unplug the power cord from the wall outlet during printing or other operation.

When you press STANDARD while pausing (precise memory function)

If your camcorder has a fine-synchro edit function, the camcorder automatically rewinds, resumes playback, and pauses at the point you designated (precise memory function).
This function improves the print picture quality.

Notes
- If you do not use a LANC cable to connect the printer to the camcorder, precise memory function is not available. The print quality may be poor if you designate the picture during pause.
- The picture designated using precise memory function may not be the very exact picture you designated when pressing STANDARD.

Printing half-size pictures



To print only the upper or lower half
Press only UPPER or LOWER, then press PRINT.

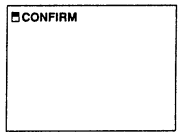
You can check the pictures before printing
Press MEMORY RECALL. Each time you press the button, the upper half picture and lower half picture appear on the TV screen alternately.

To print the designated picture again
Press PRINT while the selected pictures appear sideways on the TV screen.

You can print two half-size pictures on the upper and lower halves of a print paper.

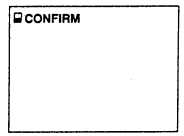
1 **Start playing back the camcorder.**

2 **Press UPPER when the picture you want to print on the upper half appears on the TV screen.**



3 **Press SOURCE.**
The playback picture appears on the TV screen again.

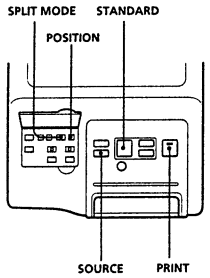
4 **Press LOWER when the picture you want to print on the lower half appears on the TV screen.**



5 **Press PRINT.**
The designated picture disappears and the printer starts preparing pictures for printing. Then, printing starts.
When printing ends, the designated pictures appear sideways on the TV screen as shown on the right.

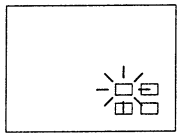
Printing 1/4- or 1/16-size pictures

You can make prints divided into 1/4- or 1/16-size pictures. Each print has 4 (when 1/4-size) or 16 (when 1/16-size) pictures.
The pictures are designated from the upper left to the lower right. You can also directly designate where to put each picture.



1 **Press SPLIT MODE until "SPLIT 4" or "SPLIT 16" appears on the TV screen.**

The flashing frame on the TV screen shows that the picture is to be printed on the corresponding position of the print.



2 **Start playing back the camcorder.**

3 **When the playback picture you want to print appears on the TV screen, press STANDARD.**

4 **Press SOURCE.**

The playback picture appears on the TV screen again. The frame where you've stored the picture changes to a painted square. The frame where you'll store the next picture starts flashing.

5 **Repeat steps 3 and 4 until you have designated 4 (or 16) pictures.**

The designated pictures appear on the TV screen in 1/4- or 1/16-size.
When the playback picture is displayed on the TV screen, you can check the pictures by pressing MEMORY RECALL.

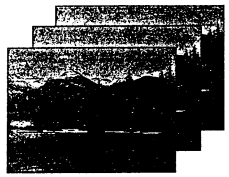
6 **Press PRINT.**

To return to normal print mode
Press SPLIT MODE until "SPLIT 4" and "SPLIT 16" disappear.

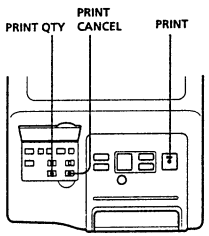
You can designate the position for the pictures
Press POSITION repeatedly until the frame you want to designate flashes.

To re-designate printing pictures
Press SOURCE, and press POSITION repeatedly until the frame you want to designate flashes. Then store the picture again.

Making multiple prints



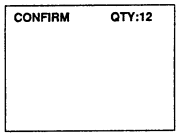
You can automatically make up to 25 sheets of the same print consecutively. Before printing, designate the picture and set the number of prints. Multiple printing is available for every print feature that this printer supports.



1 **Designate the picture to print.**

2 **Press PRINT QTY so that the number of prints you want appears on the TV screen.**

Each time you press the button, the number increases by one. If you press PRINT QTY while "25" appears on the TV screen, the number returns to 1.



3 **Press PRINT.**

Each time the printer completes a print, the number displayed on the TV screen decreases by one.

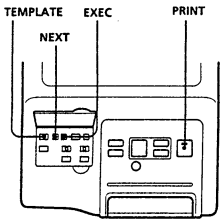
To stop printing
Press PRINT CANCEL. Multiple printing stops. The number of prints returns to 1.

Printing with a calendar

You can create a calendar with a picture printed on the upper half for any month until December 2004.

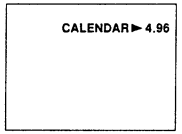
1 **Designate the picture to print.**

2 **Press TEMPLATE until "CALENDAR" appears on the TV screen.**



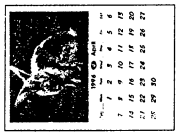
3 **Press NEXT until the desired date appears.**

Each time you press the button, the date increases by one month. The date returns to the first by holding NEXT down. The display "1. 96" indicates January 1996.



4 **Press EXEC.**

The designated picture disappears and the printer starts preparing the picture for printing.
Then, the picture shown on the right appears.



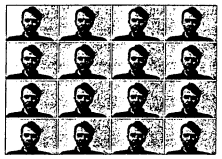
5 **Press PRINT.**

To reset to normal printing
Press TEMPLATE until no template indication is displayed.

When designating two pictures in half-size mode
The picture displayed when you press EXEC is printed on the upper half of the calendar.
The other picture is deleted.

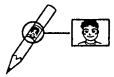
Note
This calendar prints only Sundays in red. National holidays are printed in black.

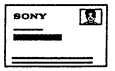
Printing on sticker papers



You can print the same 16 pictures divided into 1/16- size on a sticker paper to create your own labels, name cards, and so on.

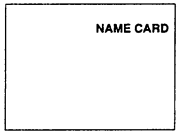
Examples

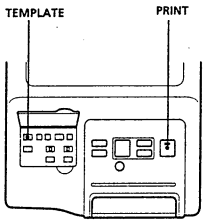




1 **Designate the picture to print.**

2 **Press TEMPLATE until "NAME CARD" appears on the TV screen.**



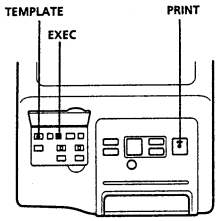


3 **Press PRINT.**

To reset to normal printing
Press TEMPLATE until no template indication is displayed.

You can make a print with the shorter side at the top
When you record pictures on the camcorder, shoot the picture with the shorter side at the top by turning the camcorder sideways on a tripod. Then make a print of the picture.

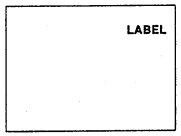
Creating a video cassette label



You can create video cassette labels to identify the contents of your video tapes.
The print size is roughly the same as the index label of an 8mm video cassette or the cassette label of a VHS video cassette. The print has two same pictures on the upper and lower halves of a print paper.
You can designate the 1/4- or 1/16- size picture, or a cropped picture as the printed picture. For easy creation of labels, use the VPM-P50WS video print pack (sticker type).

1 **Designate the picture to print.**

2 **Press TEMPLATE until "LABEL" appears on the TV screen.**

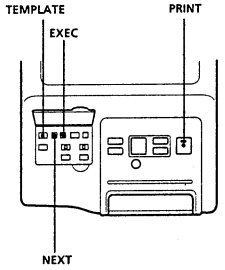


3 **Press PRINT.**

To reset to normal printing
Press TEMPLATE until no template indication is displayed.

If you designate two pictures in half-size print mode
The picture that appears on TV screen is printed up and down.

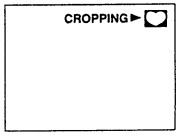
Cropping a picture



You can crop the picture using the following five patterns:
Heart, Oval, Wave, Brush, Tapestry

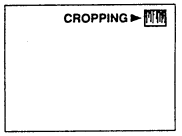
1 **Designate the picture to be cropped.**

2 **Press TEMPLATE until "CROPPING" appears on the TV screen.**



3 **Press NEXT until the desired crop pattern appears.**

Each time you press the button, the pattern changes in the following order:
Heart → Oval → Wave → Brush → Tapestry → Heart → ....



4 **Press EXEC.**

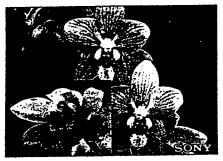
The designated crop pattern and the picture to be cropped are stored in the printer.

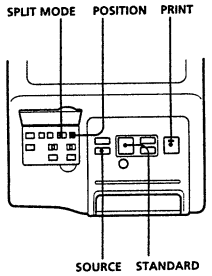
5 **Press PRINT.**

To reset to normal printing
Press TEMPLATE until no template indication is displayed.

Note
Once you press EXEC, you cannot change the picture or the crop pattern. To change the picture, start again from step 1.

Combining several pictures





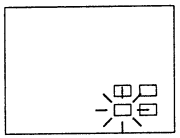
You can make prints that combine several pictures, such as the 1/4- or 1/16-size pictures with a full-size picture (picture in picture).

1 **Designate the background picture using STANDARD.**

2 **Press SOURCE.**
The playback picture appears on the TV screen.

3 **Press SPLIT MODE until "SPLIT 4" or "SPLIT 16" appears.**

4 **Press POSITION until the frame you want to designate flashes.**



5 **When the playback picture you want to print appears on the TV screen, press STANDARD.**
The designated picture is stored in the designated position.

6 **Repeat steps 2 to 5 until you designate all desired pictures.**

7 **Press PRINT.**

To reset to normal printing
Press SPLIT MODE until the "SPLIT 4" or "SPLIT 16" disappears.

Note
Press STANDARD to designate the background picture in step 1. The picture designated by pressing the UPPER or LOWER button cannot be used for the background picture.

Adjusting the picture

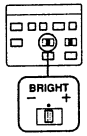
You can adjust the quality of prints.
You can also adjust the source (input) picture quality if the picture quality differs between the printer and the camcorder.

Adjusting the picture quality of prints

Since you cannot determine the adjusted picture quality on the TV screen, check the printed picture.

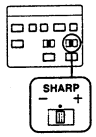
To adjust the brightness of prints

Set BRIGHT to the desired position.
- Set to "–" to decrease the brightness of the print.
- Set to "+" to increase the brightness of the print.



To adjust the sharpness of prints

Set SHARP to the desired position.
- Set to "–" to decrease the sharpness of the print.
- Set to "+" to increase the sharpness of the print.

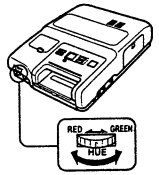


Adjusting the source picture quality

You can also adjust the source (input) picture quality before designating the picture. Normally, since you do not have to adjust it, keep the controls at the center position.

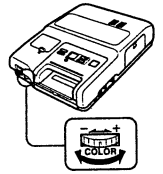
To adjust the hue of the source picture

Adjust the hue of the picture by turning the HUE control.
- Turning to the left makes the hue redder.
- Turning to the right makes the hue greener.



To adjust the color of the source picture

Adjust the color of the picture by turning the COLOR control.
- Turning to the left makes the color lighter.
- Turning to the right makes the color darker.



Precautions

On safety

- Operate the printer on 120 V AC, 60 Hz only.
- Be careful not to set or drop any heavy objects on the power cord, or to damage the cord in any way. Never operate this printer with a damaged power cord.
- Should any solid object or liquid fall into the cabinet, unplug the printer and have it checked by qualified personnel before operating it any further.
- Never disassemble the printer.
- To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- When the printer is not going to be used for an extended period of time, disconnect the power cord from the wall outlet.
- Do not handle the printer roughly.
- To reduce the risk of electrical shock, always unplug the printer from electrical outlet before cleaning and servicing the printer.

On installation

- Avoid placing the unit in a location subject to:
  - vibration
  - high humidity
  - excessive dust
  - direct sunlight
  - extremely high or low temperatures
- Do not use electronic equipment near the unit. The unit will not work properly in electromagnetic fields.
- The unit is designed to operate horizontally. Never attempt to operate the printer in a tilted position. If the unit was placed on its side or with its top panel facing down, make sure to remove the paper tray and check that print papers are set properly before starting operation.
- Do not place heavy objects on the printer.
- Leave enough room around the printer so that the ventilation holes are not blocked. Blocking these holes may cause internal heat build-up.

On operation

- If the temperature inside the unit rises too high, the internal fan automatically starts rotating to keep the appropriate temperature for printing.
- To avoid malfunction, do not record on the VCR the output signal from the MONITOR OUT jack of the unit.

On moisture condensation

If the printer is brought directly from a cold location to warm location or placed in an extremely warm or humid room, moisture may condense inside the unit. In such cases the printer will probably not work properly and may even develop a fault if you persist in using it. If moisture condensation occurs, turn off the power and do not use the printer for at least one hour.

On cleaning

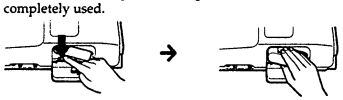
Clean the cabinet, panel and controls with a soft dry cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine, which may damage the finish.

On the print cartridge and print paper

On the print cartridge

To replace the print cartridge

If the completely used print cartridge is still inserted in the unit, the error message "Out of ink ribbon. Insert new cartridge." appears on the TV screen. Pull down the lever and remove the print cartridge as illustrated below to replace the print cartridge with a new one.
You cannot reuse a print cartridge that has been completely used.

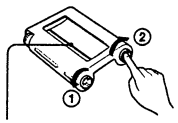


Pull down the lever

Remove the print cartridge

When you use a partially-used print cartridge

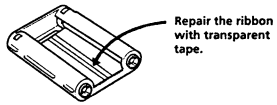
Remove any slack (①). Then, wind the ink ribbon until the black bar appears on the left (②).



While pressing the center of the reel, wind the ink ribbon until the black bar appears on the left.

If the ink ribbon should tear

Repair the ribbon with transparent tape. There should be no problem with using the remaining portion of the ribbon.



Repair the ribbon with transparent tape.

Notes on storing the print cartridge

- Avoid placing the cartridge in a location subject to:
  - high temperatures
  - high humidity
  - excessive dust
  - direct sunlight
- When you are going to store a partially-used cartridge for an extended period of time, store it in its original bag.

On the print paper

Notes on storing the print paper

- Avoid placing the print paper in a location subject to:
  - high temperatures
  - high humidity
  - excessive dust
  - direct sunlight
- When you are going to store a partially-used print paper for an extended period of time, store it in its original bag.

Before printing

Do not write or print patterns and characters on the print paper before printing.

Troubleshooting

If you run into any problem using the printer, use the following check list.
Should any problem persist after you have made the checks below, consult your nearest Sony dealer or Sony service facility.
If the error message appears on the TV screen, see "If these error messages appear" on the next page.

The power is not on.

→ Connect the AC power cord to a AC outlet securely.

There is no picture on the TV screen.

→ Set the TV's input selector to video input.
→ Turn on the power of the TV, camcorder and printer. The camcorder's power may be turned off if the camcorder stands by for recording for about five minutes. Turn the power on again in this case.
→ Connect the printer to the camcorder and TV correctly.
→ Start playback on the camcorder (or VCR).

Cannot print.

→ Insert the print paper into the paper tray.
→ Press MEMORY RECALL and then press PRINT.
→ Designate the picture by pressing STANDARD (or, UPPER or LOWER).
→ Remove the jammed paper. See "If the print paper jams" on the next page.

The color of the print is too light, or too dark.

→ Set BRIGHT on the upper panel to "+" or "–".

The outline of the print is too dull, or too sharp.

→ Set SHARP on the upper panel to "+" or "–".

The beeps sound.

→ An unvailable button has been pressed during operation.

Cannot remove the print cartridge.

→ Turn the power off. Remove the print cartridge when the rotation sound of the printer stops.

(continued)

If these error messages appear

Check the following to troubleshoot problems.

Please place Video Print Paper in tray.
- Make sure that print papers are inserted in the paper tray.
- Make sure that the paper tray is inserted firmly into place.

Please insert Video Print Cartridge.
- Make sure that the print cartridge is inserted.

Please remove jammed paper from rear of unit.
- Remove the jammed print paper from the rear of the unit.

Please open paper tray and remove jammed paper.
- Remove the paper tray and remove the jammed print paper.

Out of ink ribbon. Insert new cartridge.
- The ink ribbon has been completely used up. Replace the print cartridge with a new one.

Print paper and ink ribbon are mismatched.
- Use the print cartridge and the print paper supplied in the same carton.

Please remove printed paper.
- Too many prints are left on the paper outlet. Remove the prints.

Please wait while printer resets itself.
- The temperature inside the printer is not suitable for printing. Wait until the unit starts printing again automatically.
  If the printer does not start printing even when the message disappears, press the PRINT.

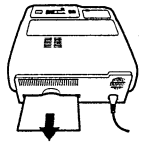
Cannot print images. See instruction manual.
- Make sure that the camcorder starts playback.
- If you use the C⁽ᴸ⁾LANC cable to connect the printer, make sure that the C⁽ᴸ⁾LANC cable is connected correctly and securely. If you use the VCR with the C⁽ᴸ⁾LANC M/S mode switch, set to the "S" position.

If the print paper jams

If the print paper jams, the error message appears on the screen and printing stops. Remove the jammed paper according to the following procedures.

If the error message "Please remove jammed paper from rear of unit." appears on the TV screen

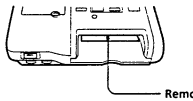
Remove the jammed paper from the rear of the unit.



Remove the jammed paper.

If the error message "Please open paper tray and remove jammed paper."

Remove the paper tray and remove the jammed paper. Then make sure that the print papers are set in the tray properly and reinsert the tray.



Remove the jammed paper.

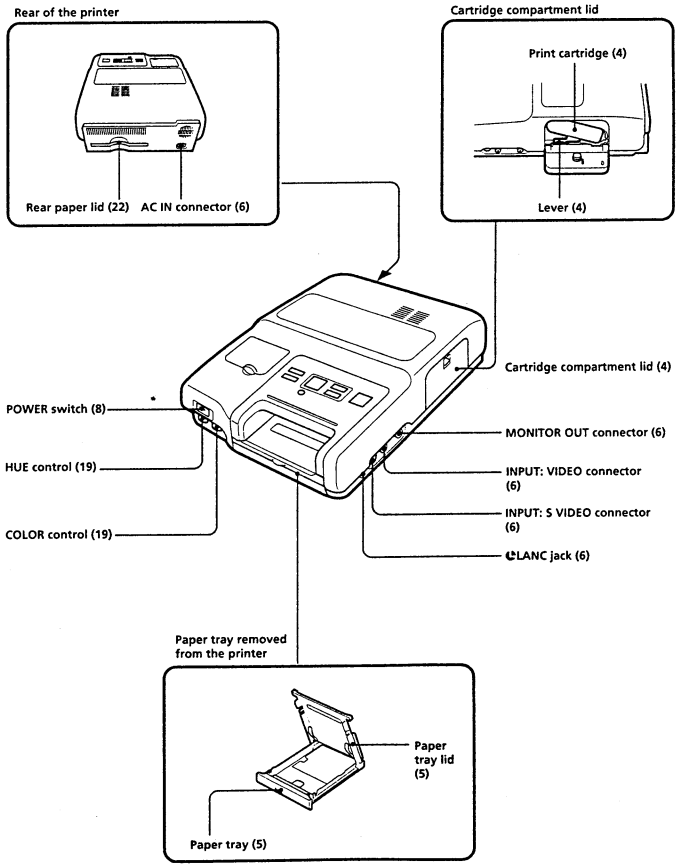
Note

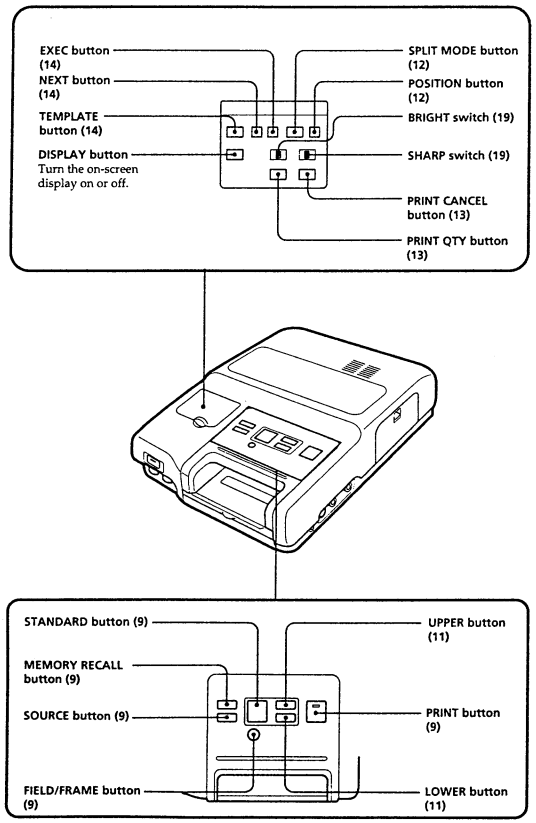
If the error message still appears on the TV screen after having removed the jammed paper, turn the power off and on again. In this case, the stored picture and various settings in memory will be canceled.

Index to parts and controls

For explanation of the use of each part, refer to the pages indicated in ( ).

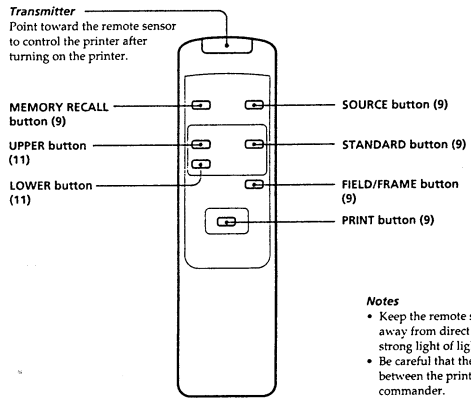
Main unit





Remote commander

The supplied remote commander has the same basic operation buttons as the main unit.
Point the head of the remote commander toward the remote sensor on the printer. You can operate the printer with the remote commander within 5 m (16 feet 5 inches) of the printer.

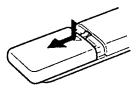

Transmitter
Point toward the remote sensor to control the printer after turning on the printer.
MEMORY RECALL button (9)
UPPER button (11)
LOWER button (11)
SOURCE button (9)
STANDARD button (9)
FIELD/FRAME button (9)
PRINT button (9)

Notes

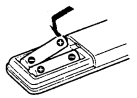
- Keep the remote sensor of the printer away from direct sunlight or the strong light of lighting equipment.
- Be careful that there is no obstacle between the printer and the remote commander.

Installing the batteries

1 Push to open the lid.



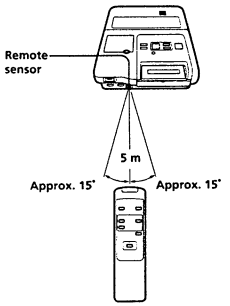
2 Install two size AA (R6) batteries as shown below.



3 Replace the lid.

Note

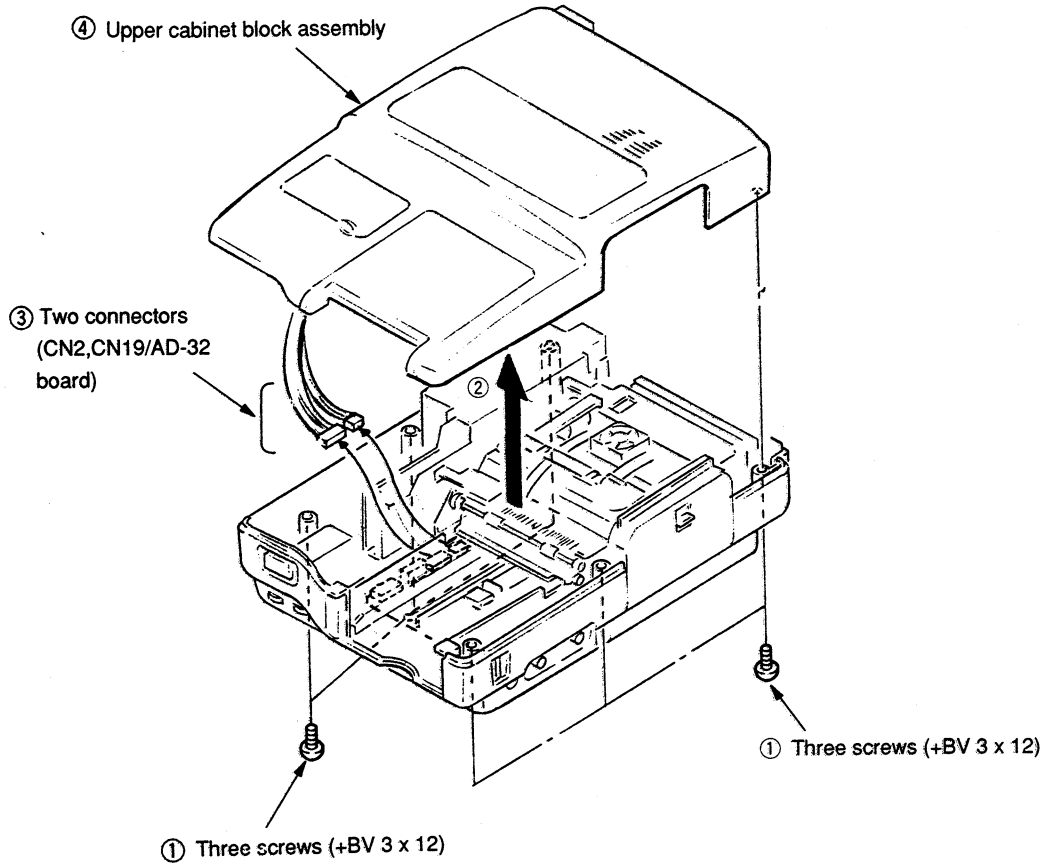
To avoid damage from possible battery leakage, remove the batteries when the commander will not be used for a long time.



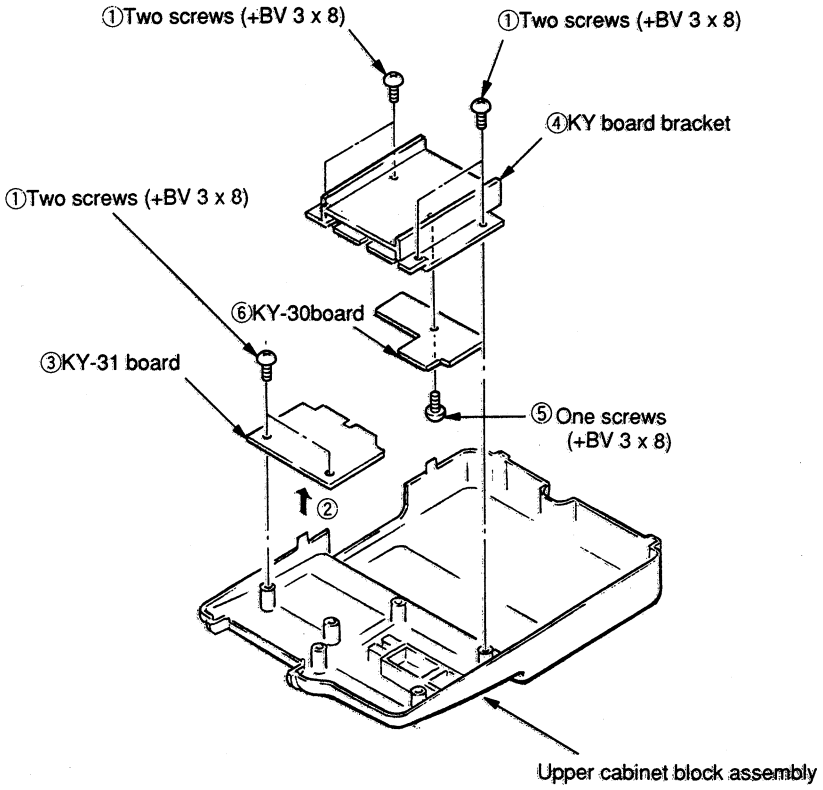
SECTION 2
DISASSEMBLY

NOTE : Follow the numerical order shown when disassembling the machine.

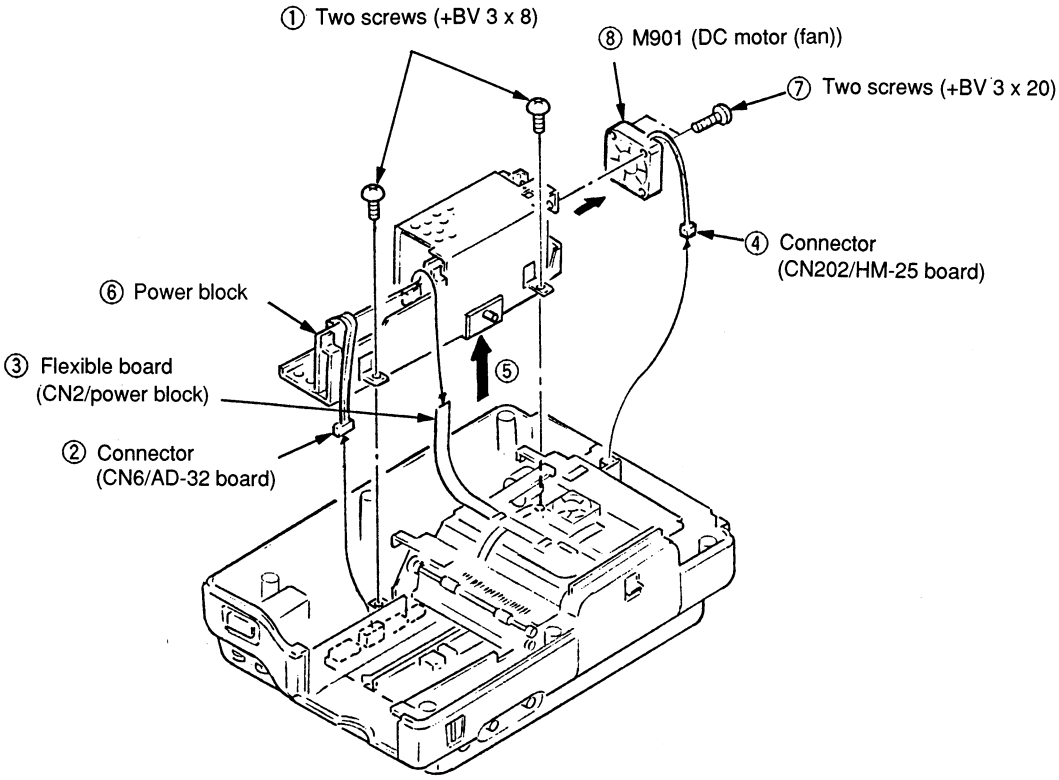
2-1. UPPER CABINET BLOCK ASSEMBLY REMOVAL



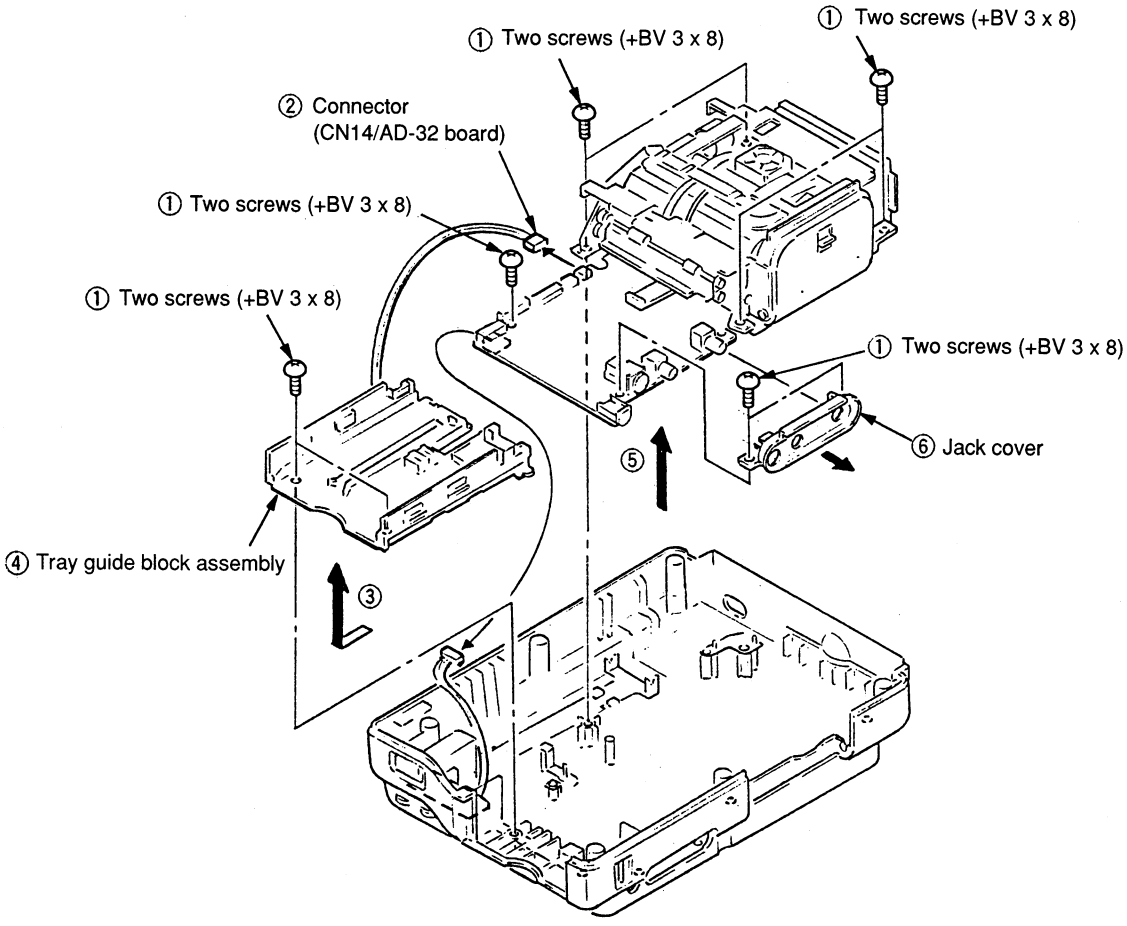
2-2. KY-30, KY-31 BOARDS REMOVAL


①Two screws (+BV 3 x 8)
①Two screws (+BV 3 x 8)
④KY board bracket
①Two screws (+BV 3 x 8)
⑥KY-30board
③KY-31 board
⑤ One screws (+BV 3 x 8)
②
Upper cabinet block assembly

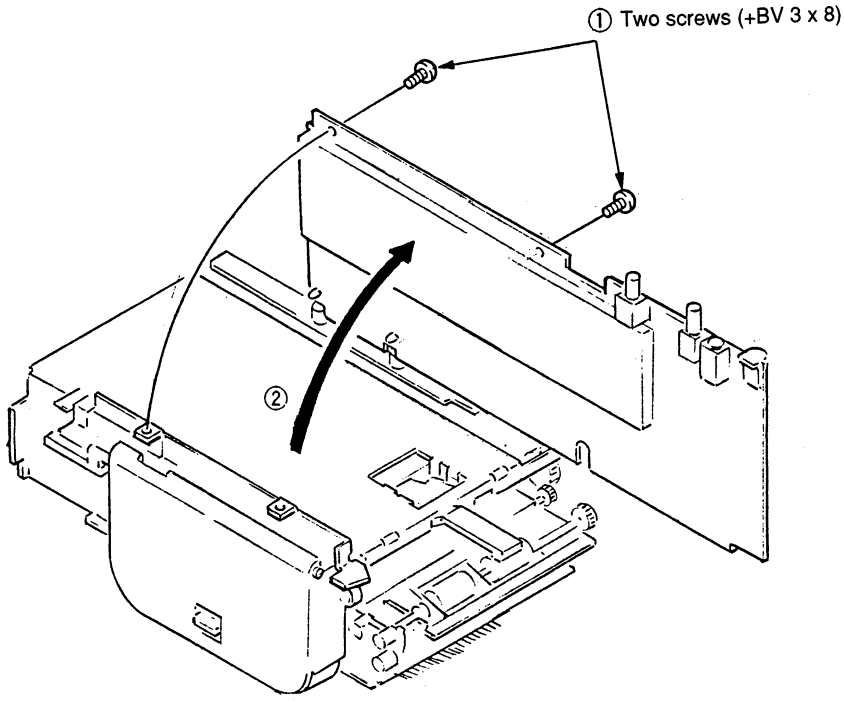
2-3. POWER BLOCK, M901 REMOVAL

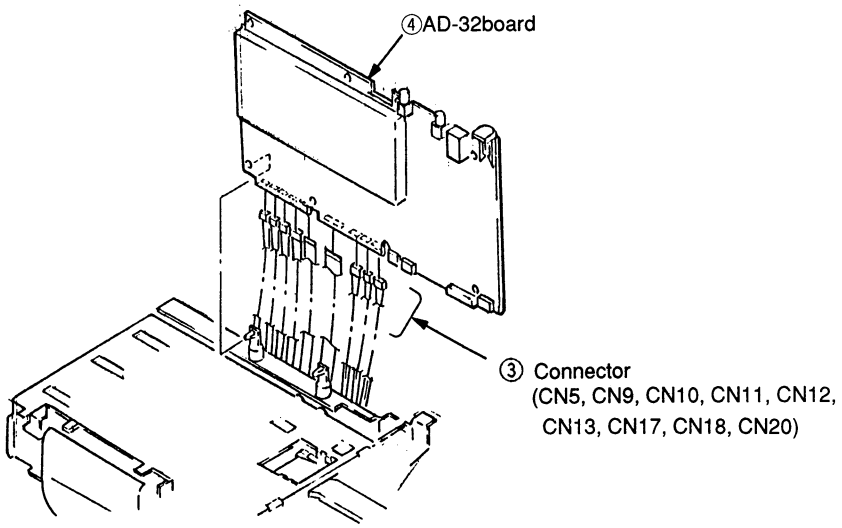


2-4. TRAY GUIDE BLOCK ASSEMBLY, JACK COVER REMOVAL

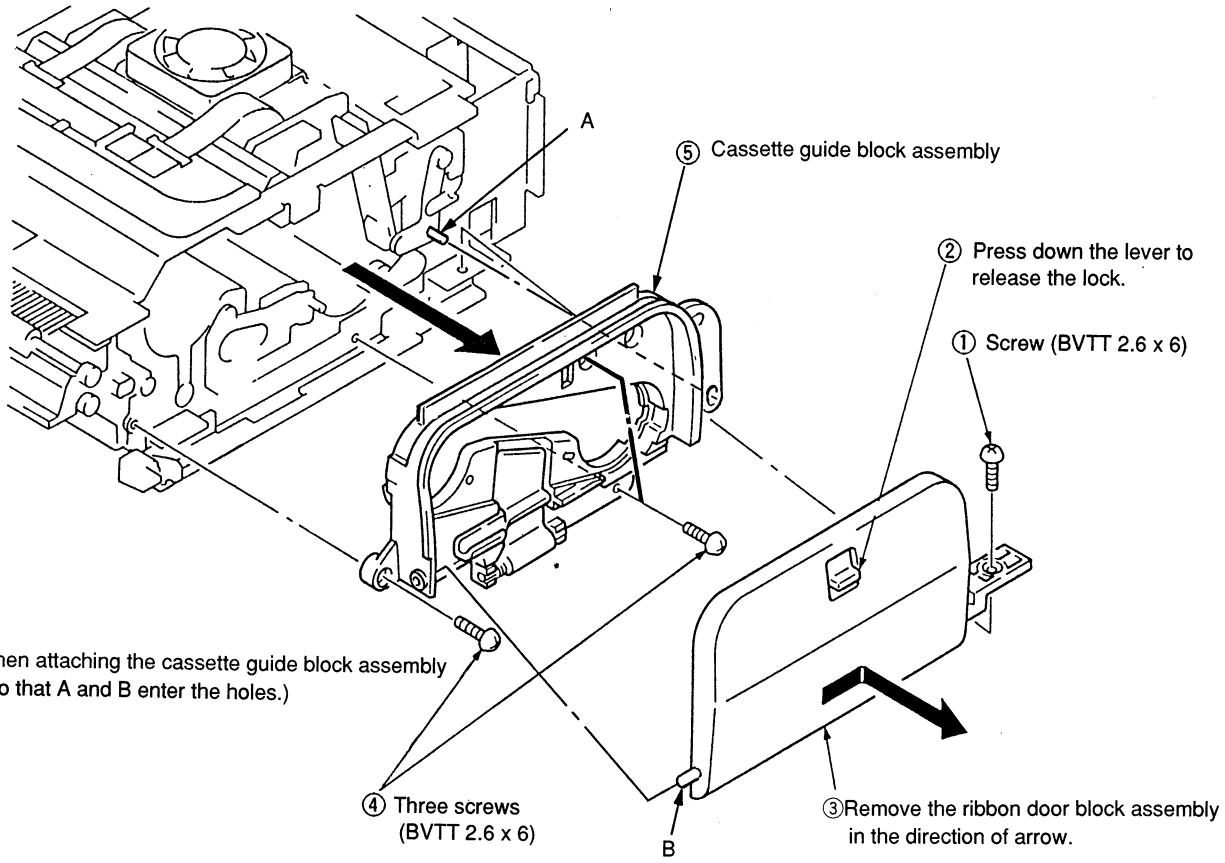

① Two screws (+BV 3 x 8)
① Two screws (+BV 3 x 8)
② Connector
(CN14/AD-32 board)
① Two screws (+BV 3 x 8)
① Two screws (+BV 3 x 8)
① Two screws (+BV 3 x 8)
⑥ Jack cover
⑤
④ Tray guide block assembly
③

2-5. AD-32 BOARD REMOVAL

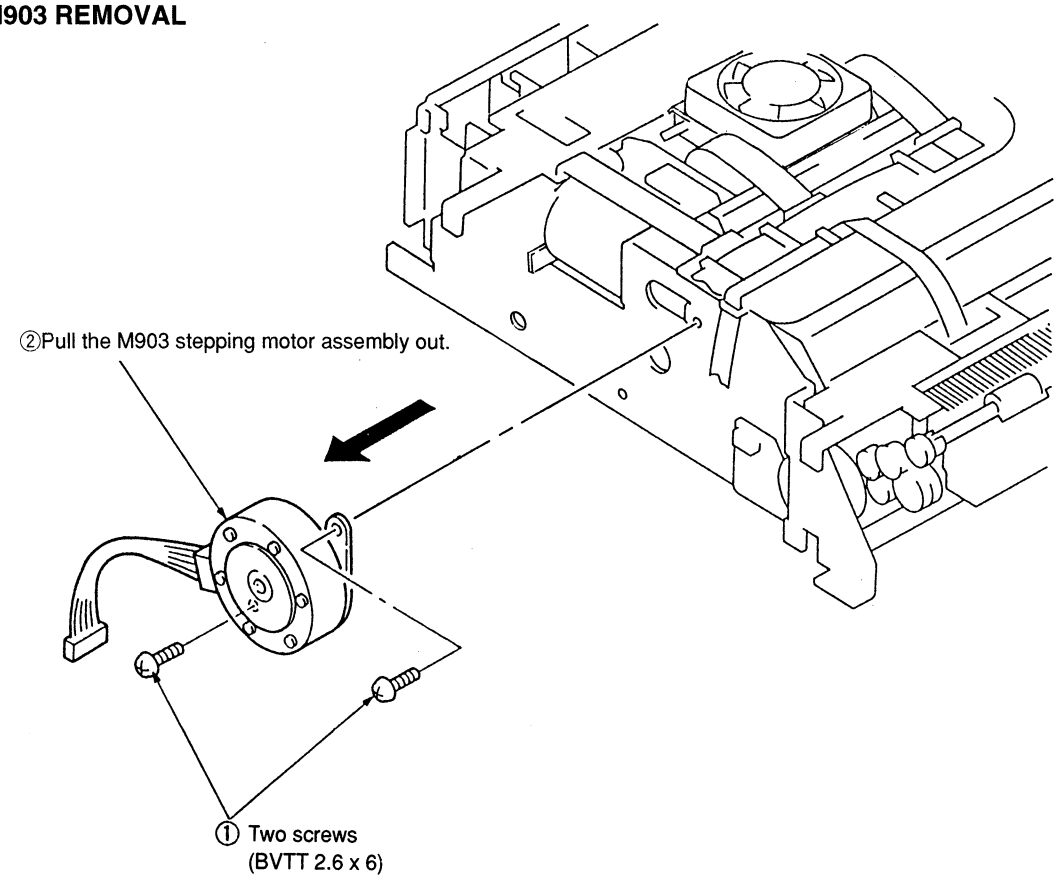




2-6. RIBBON DOOR, CASSETTE GUIDE REMOVAL

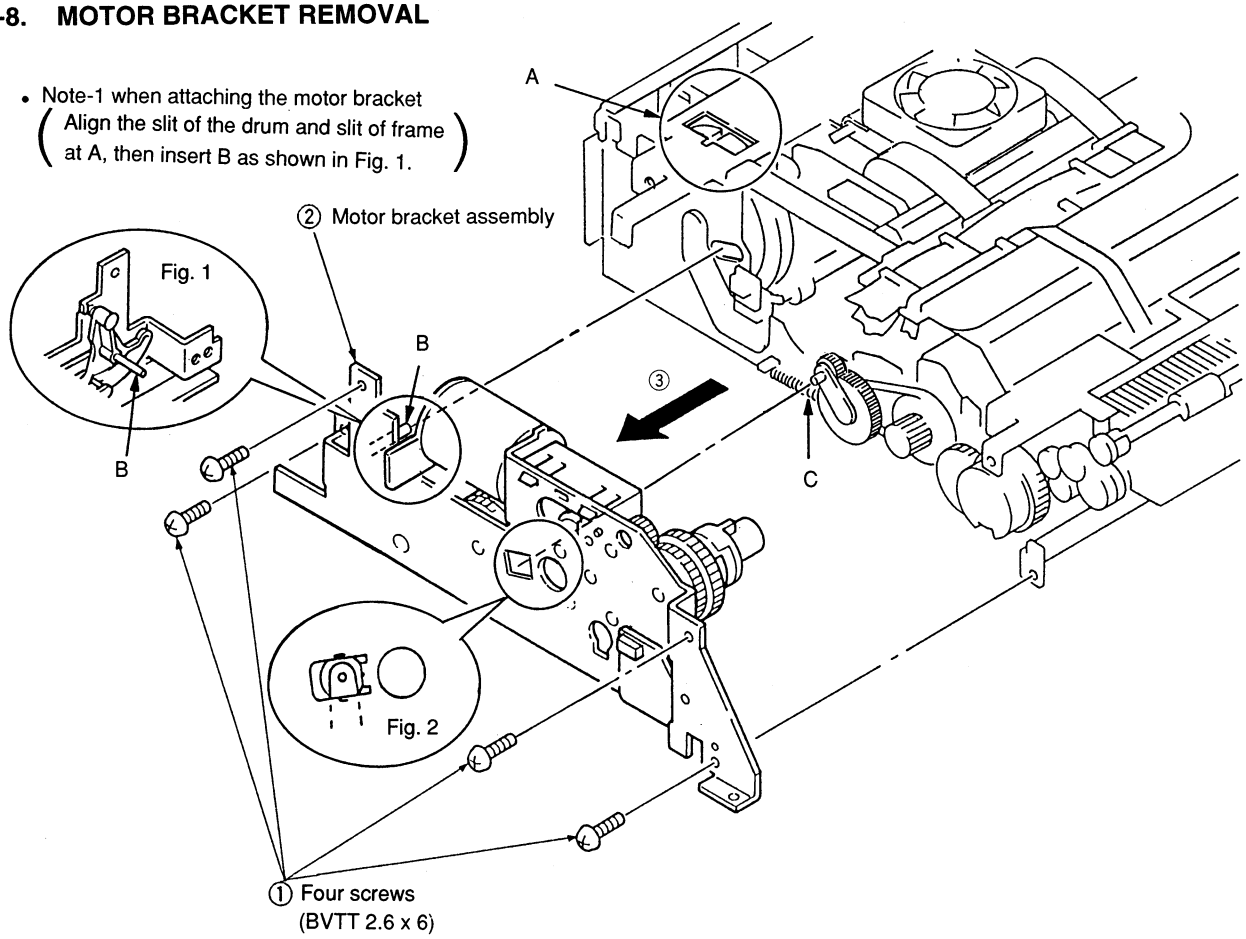

A
⑤ Cassette guide block assembly
② Press down the lever to release the lock.
① Screw (BVTT 2.6 x 6)
• Caution when attaching the cassette guide block assembly (Attach it so that A and B enter the holes.)
④ Three screws (BVTT 2.6 x 6)
B
③Remove the ribbon door block assembly in the direction of arrow.

2-7. M903 REMOVAL



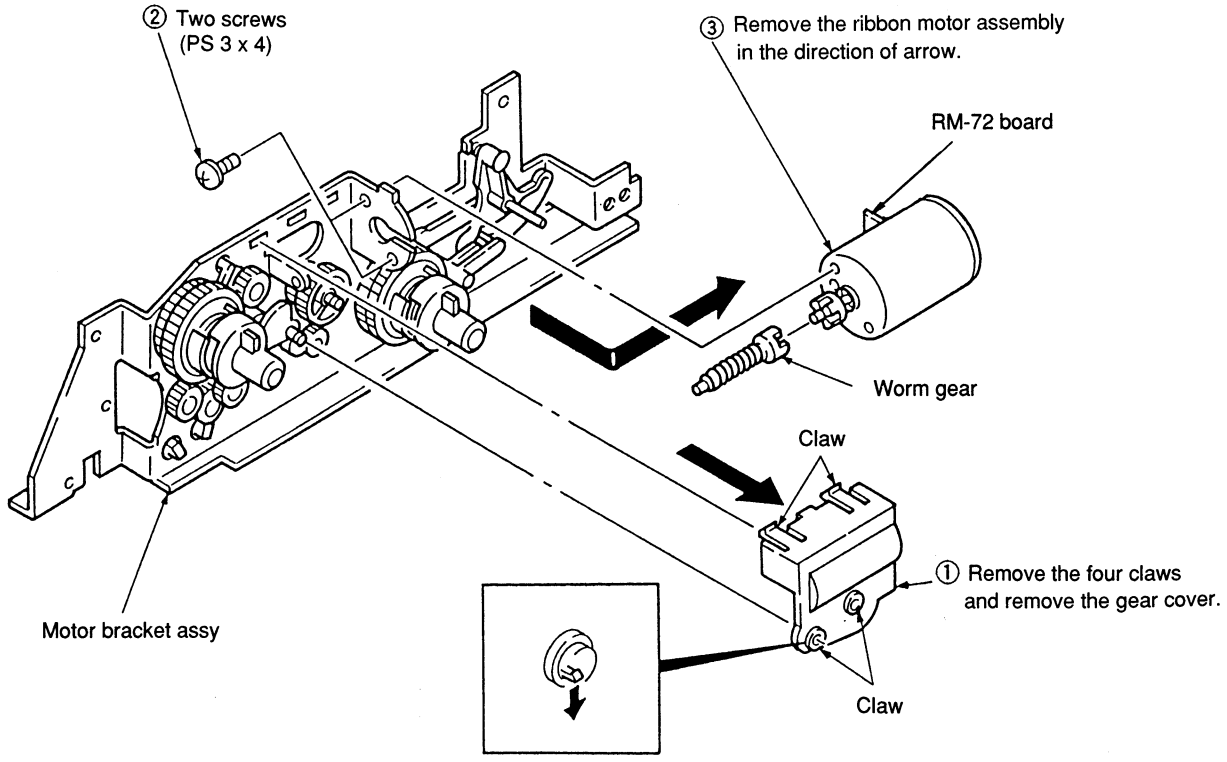
2-8. MOTOR BRACKET REMOVAL

- Note-1 when attaching the motor bracket
  (Align the slit of the drum and slit of frame at A, then insert B as shown in Fig. 1.)

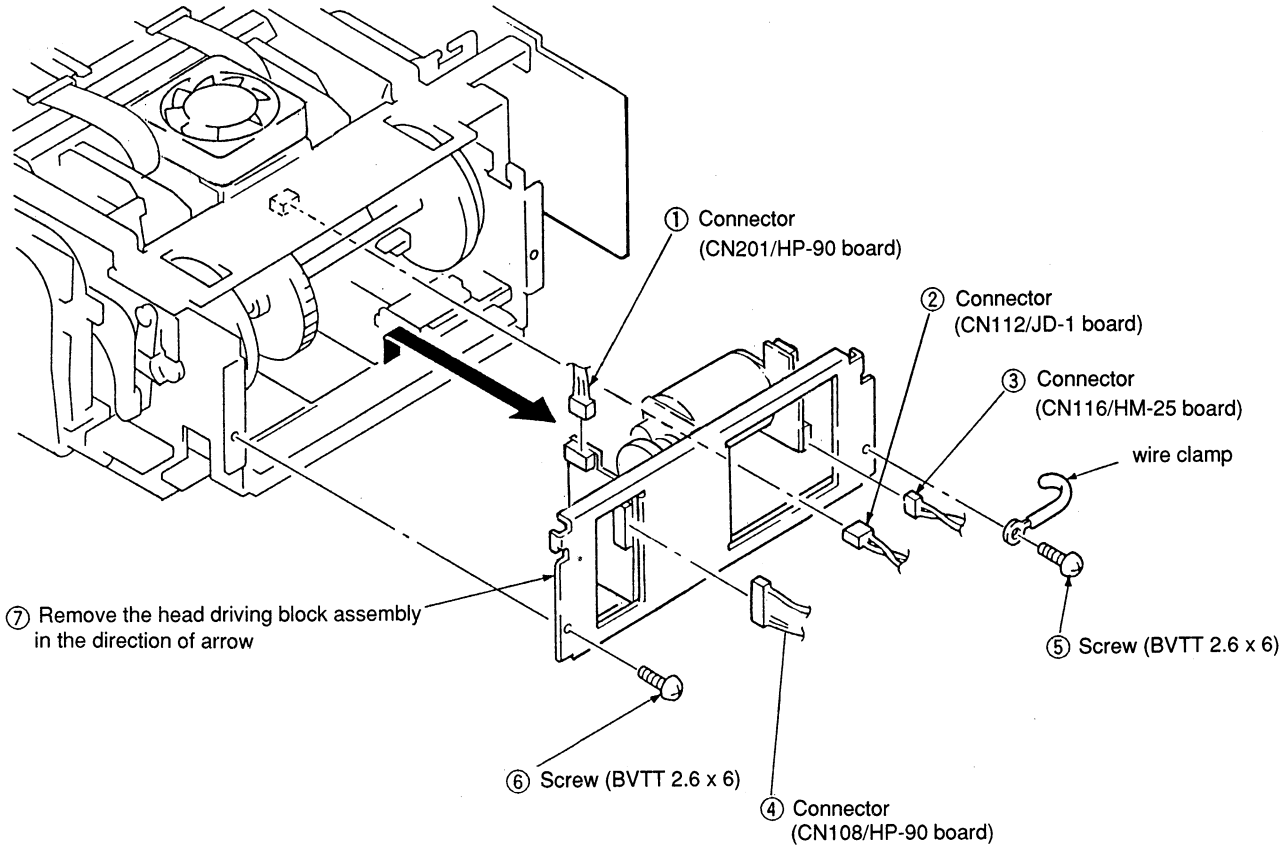


- Note-2 when attaching the motor bracket
  (Insert C so that the pin comes to the center of opening.)

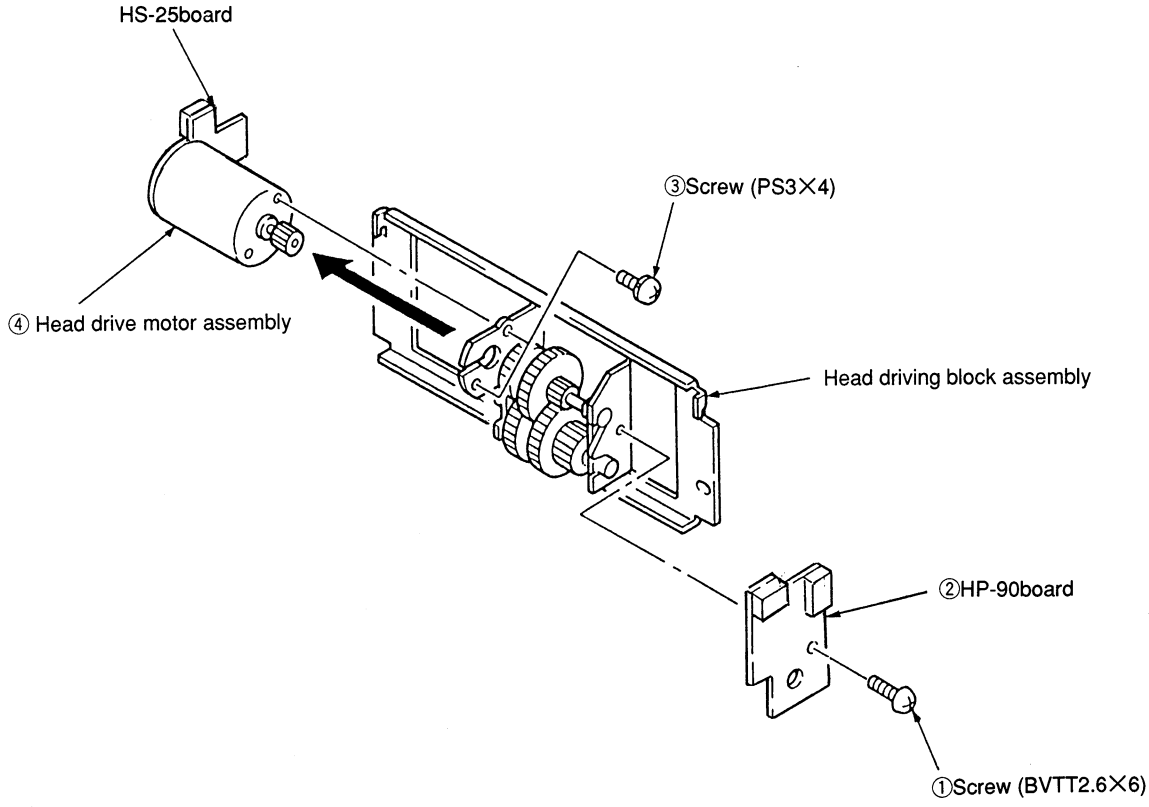
2-9. RIBBON MOTOR ASSEMBLY REMOVAL



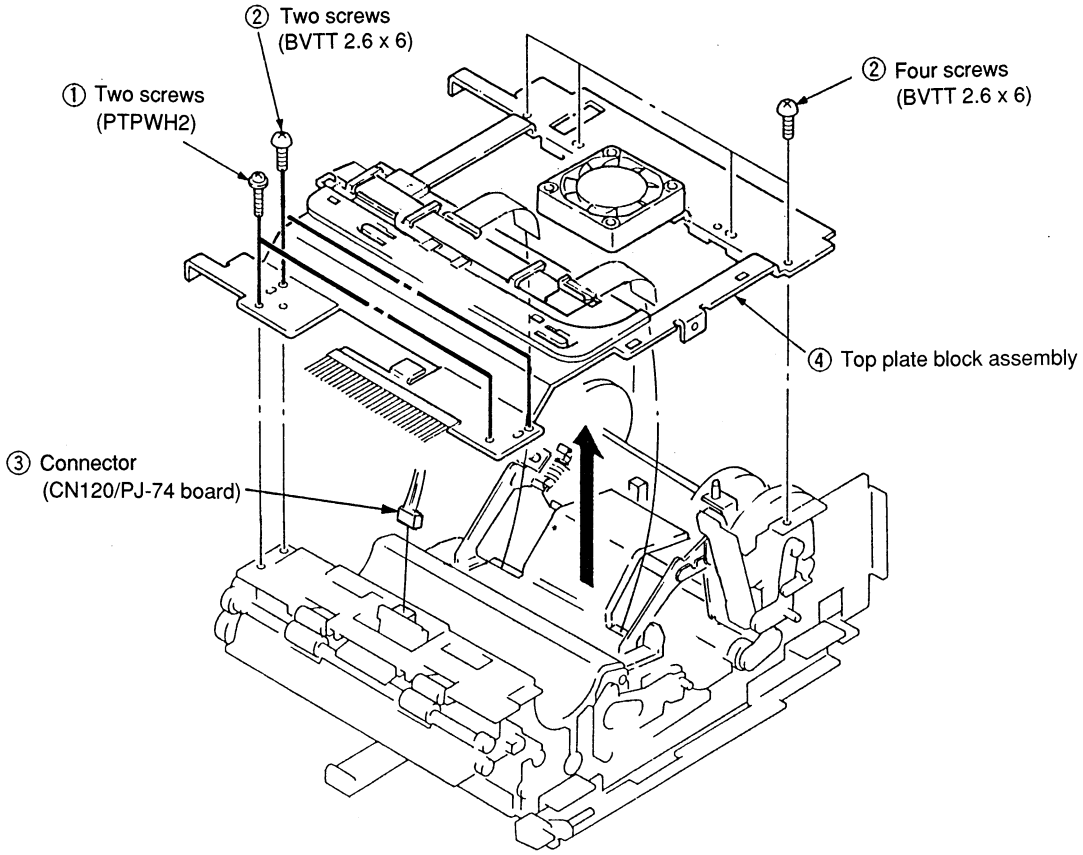
2-10. HEAD DRIVING BLOCK ASSEMBLY REMOVAL



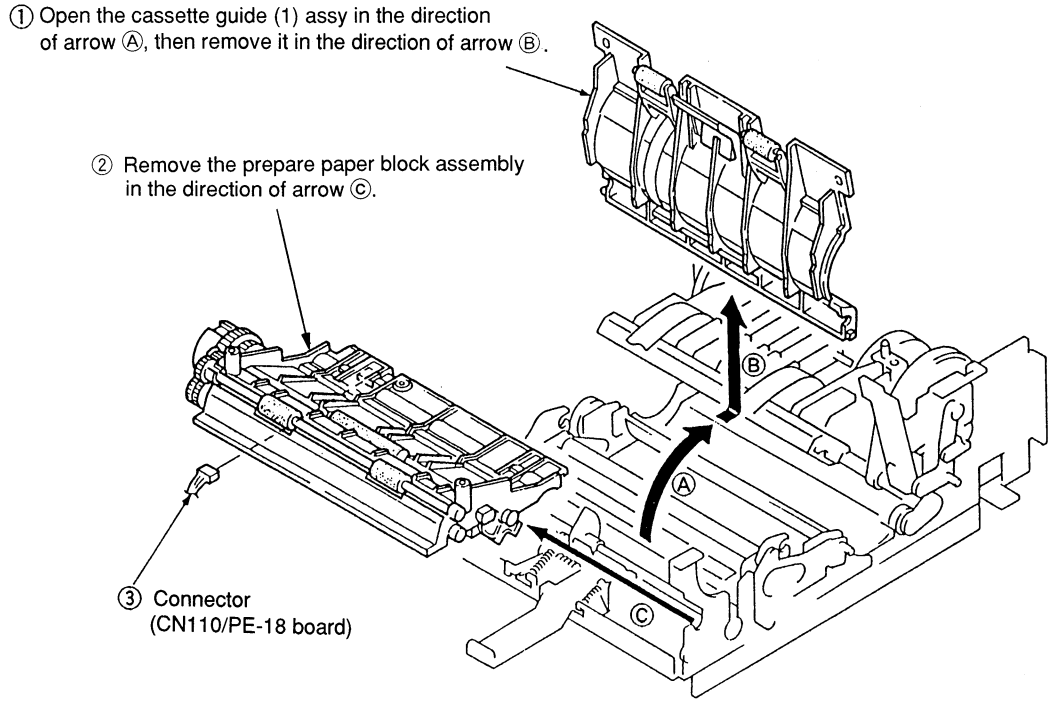
2-11. HEAD DRIVE MOTOR ASSEMBLY REMOVAL



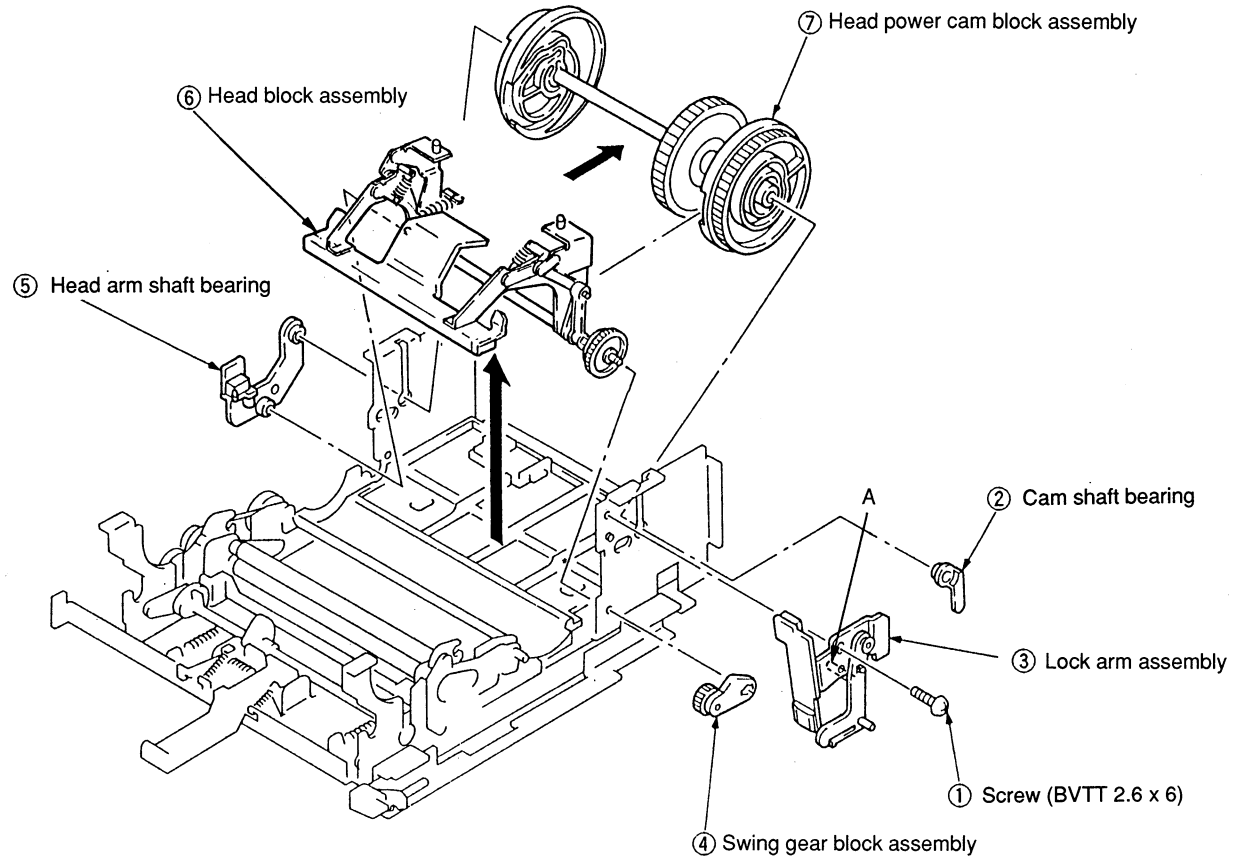
2-12. TOP PLATE BLOCK ASSEMBLY REMOVAL

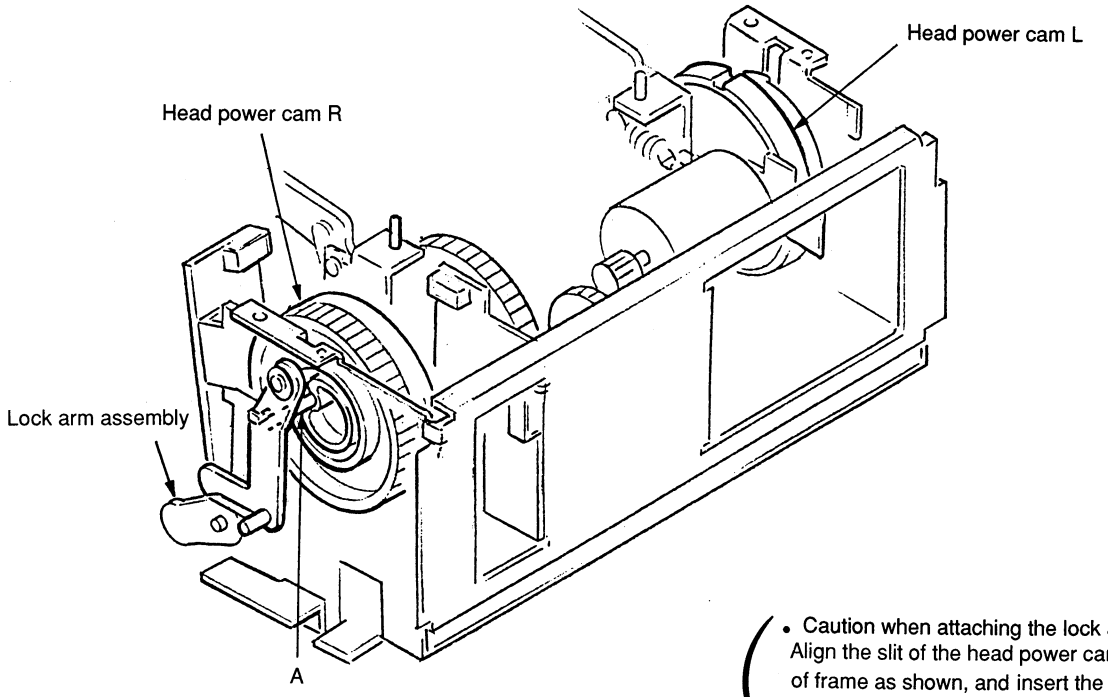


2-13. CASSETTE GUIDE (1) BLOCK ASSEMBLY, PREPARE PAPER BLOCK ASSEMBLY REMOVAL


① Open the cassette guide (1) assy in the direction of arrow Ⓐ, then remove it in the direction of arrow Ⓑ.
② Remove the prepare paper block assembly in the direction of arrow Ⓒ.
③ Connector
(CN110/PE-18 board)
Ⓐ
Ⓑ
Ⓒ

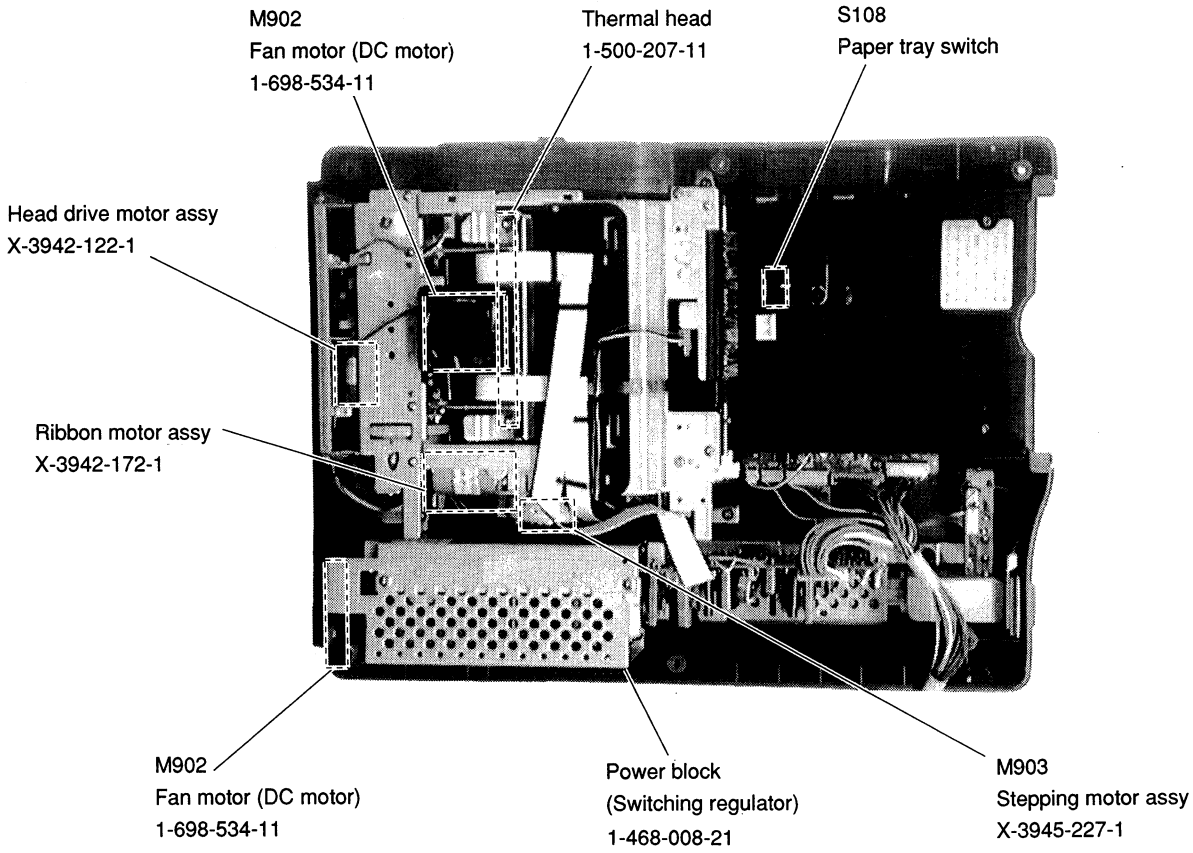
2-14. HEAD BLOCK ASSEMBLY, HEAD POWER CAM BLOCK ASSEMBLY REMOVAL


⑦ Head power cam block assembly
⑥ Head block assembly
⑤ Head arm shaft bearing
A
② Cam shaft bearing
③ Lock arm assembly
① Screw (BVTT 2.6 x 6)
④ Swing gear block assembly

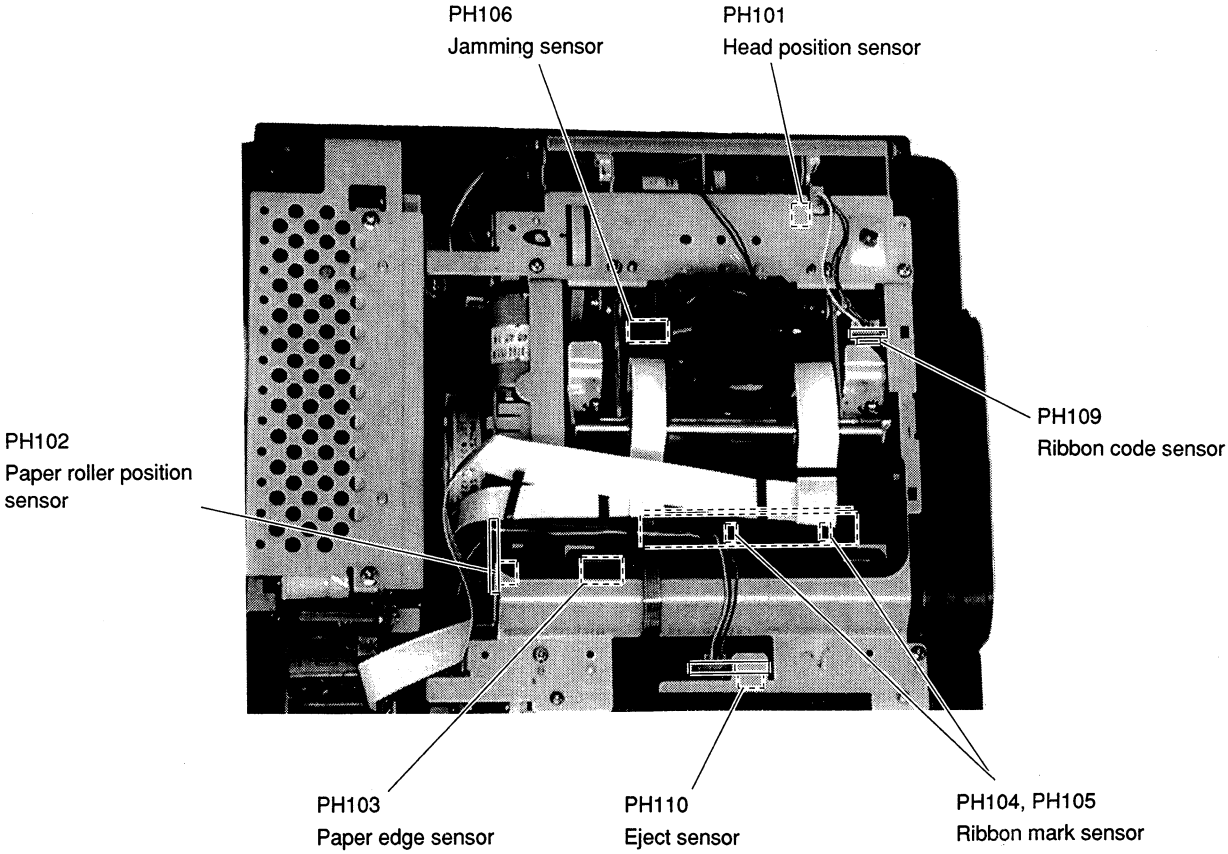


• Caution when attaching the lock arm assembly
Align the slit of the head power cam L and slit of frame as shown, and insert the pin A into the groove of the head power cam R, when attaching the lock arm assembly.

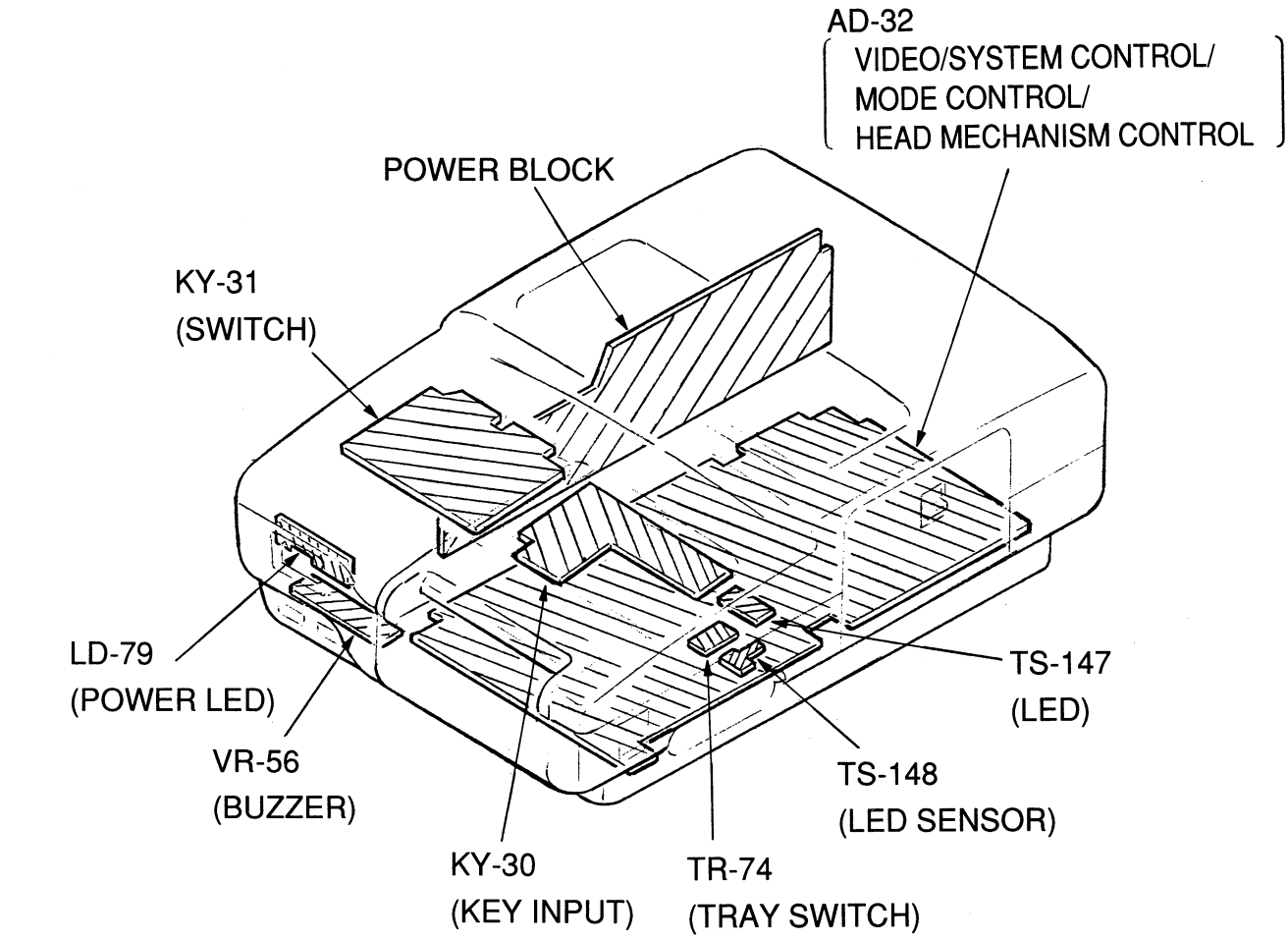
2-15. NAMES OF MAIN PARTS

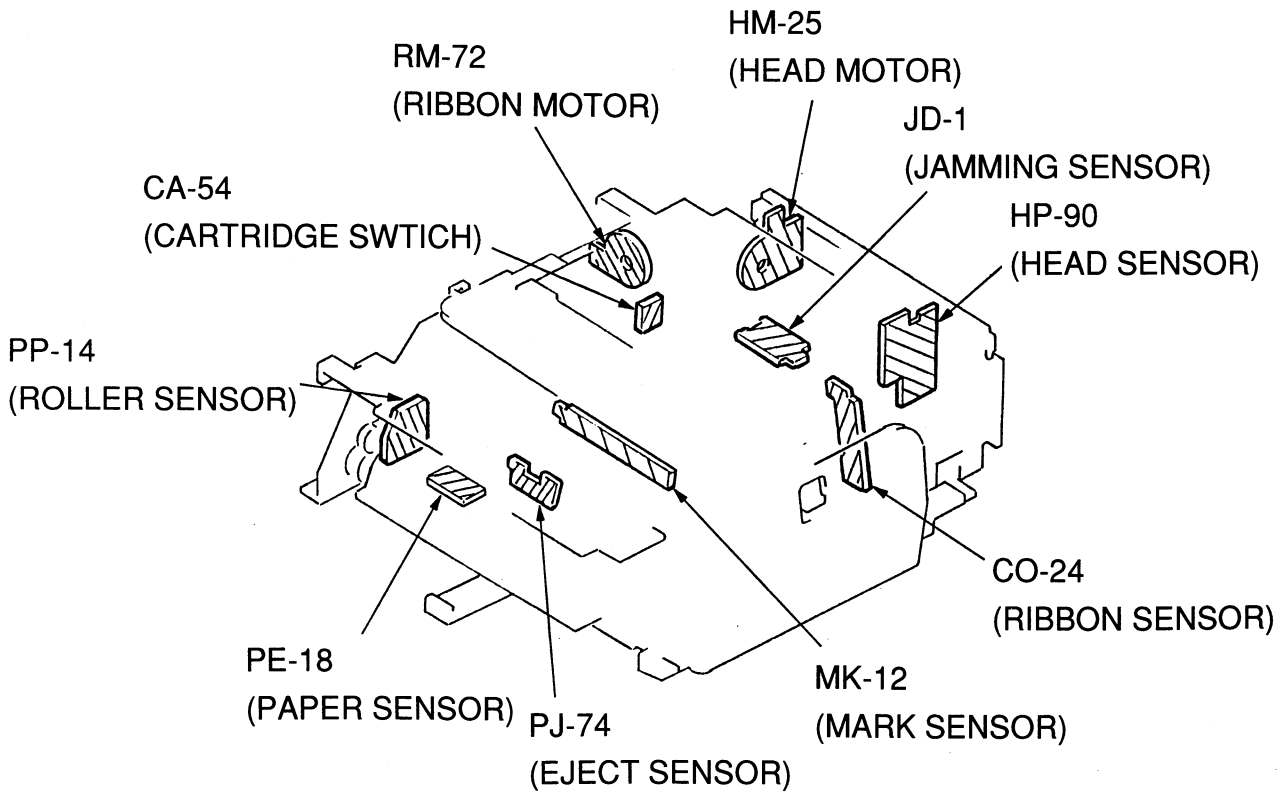


2-16. LOCATIONS OF SENSORS



2-17. CIRCUIT BOARDS LOCATION





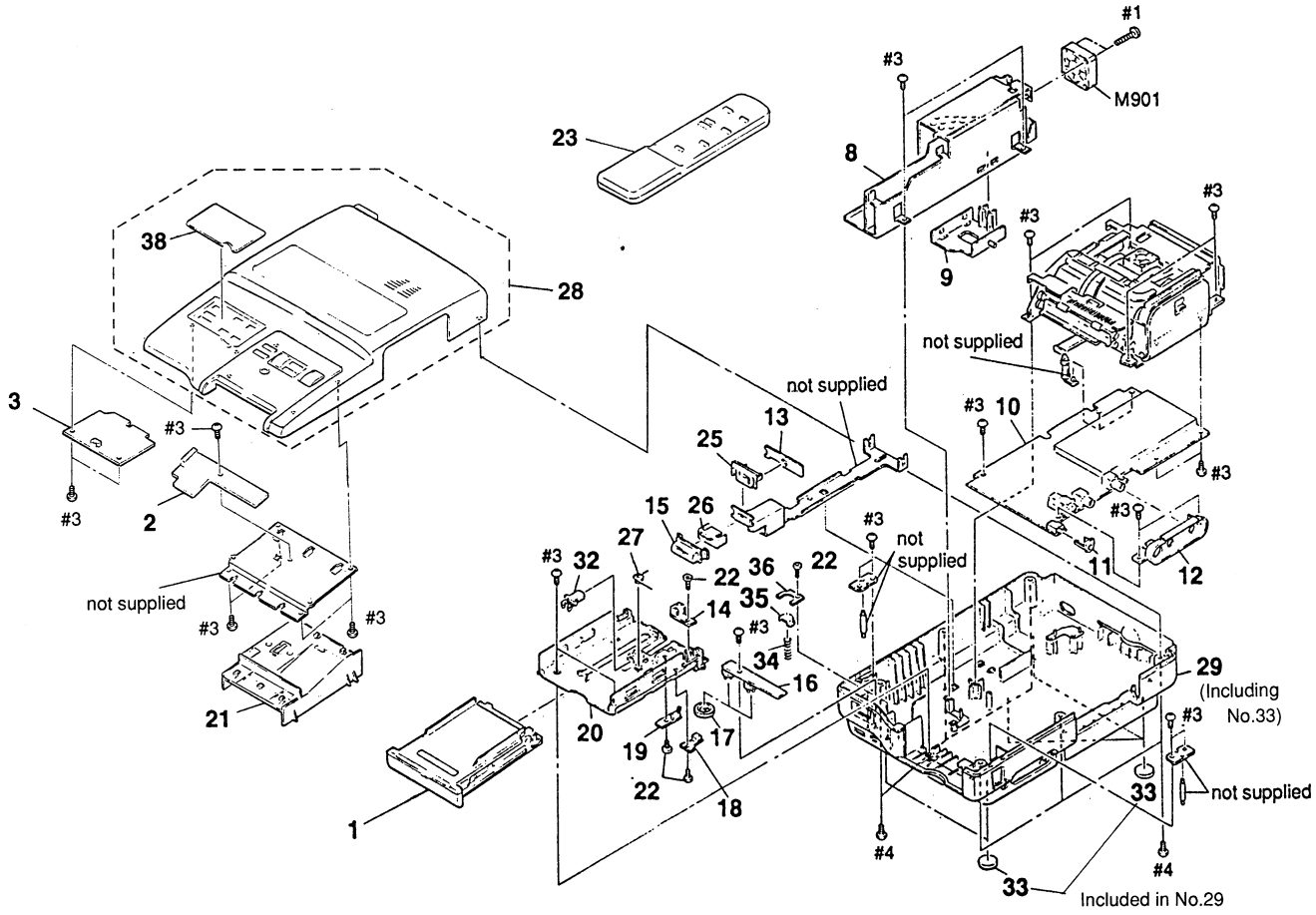
SECTION 5
REPAIR PARTS LIST

5-1. EXPLODED VIEWS

NOTE:

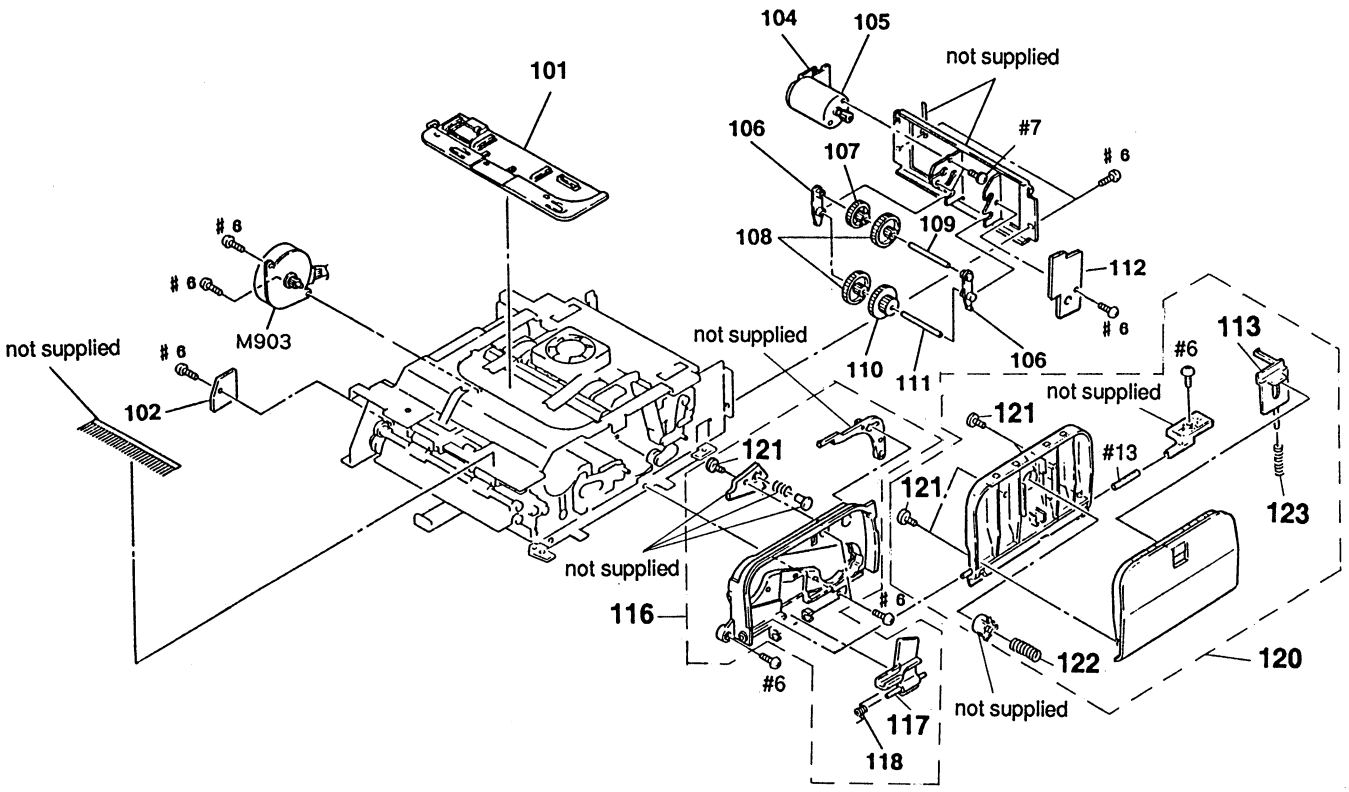
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (#mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.



Ref. No.	Part No.	Description	Remarks
1	A-7082-993-A	TRAY BLOCK ASSY, PAPER	
* 2	A-7066-567-A	KY-30 BOARD, COMPLETE	
* 3	A-7066-568-A	KY-31 BOARD, COMPLETE	
⚠8	1-468-008-21	POWER BLOCK	
* 9	3-962-716-01	PLATE, SLIDE, POWER	
* 10	A-7066-564-A	AD-32 BOARD, COMPLETE	
11	3-962-707-01	COVER, LANK	
12	3-962-706-01	COVER, JACK	
* 13	A-7066-566-A	LD-79 BOARD, COMPLETE	
* 14	1-656-730-11	TS-147 BOARD	
15	3-962-711-11	BUTTON, POWER	
* 16	A-7066-565-A	VR-56 BOARD, COMPLETE	
17	3-962-717-01	KNOB, VOLUME	
* 18	1-656-731-11	TS-148 BOARD	
* 19	A-7066-339-A	TR-74 BOARD, COMPLETE	
20	A-7082-814-A	GUIDE BLOCK ASSY, TRAY	
* 21	3-962-673-01	FIN	
22	3-945-884-01	SCREW (2X5)	
23	1-473-328-11	REMOTE CONTROL (RMT-M1)	
25	3-962-714-01	HOLDER, POWER LED	
26	3-962-715-01	PLATE, LIGHT GUIDE, POWER LED	
27	3-962-720-01	SPRING, TRAY GUIDE	
28	A-7082-996-A	CABINET BLOCK ASSY, UPPER	
29	X-3945-413-1	CABINET ASSY, LOWER	
32	4-040-472-01	LATCH, D.C.	
33	4-860-711-00	FELT	
38	X-3945-412-1	DOOR ASSY, FUNCTION	
M901	1-698-534-11	MOTOR, DC (FAN)	

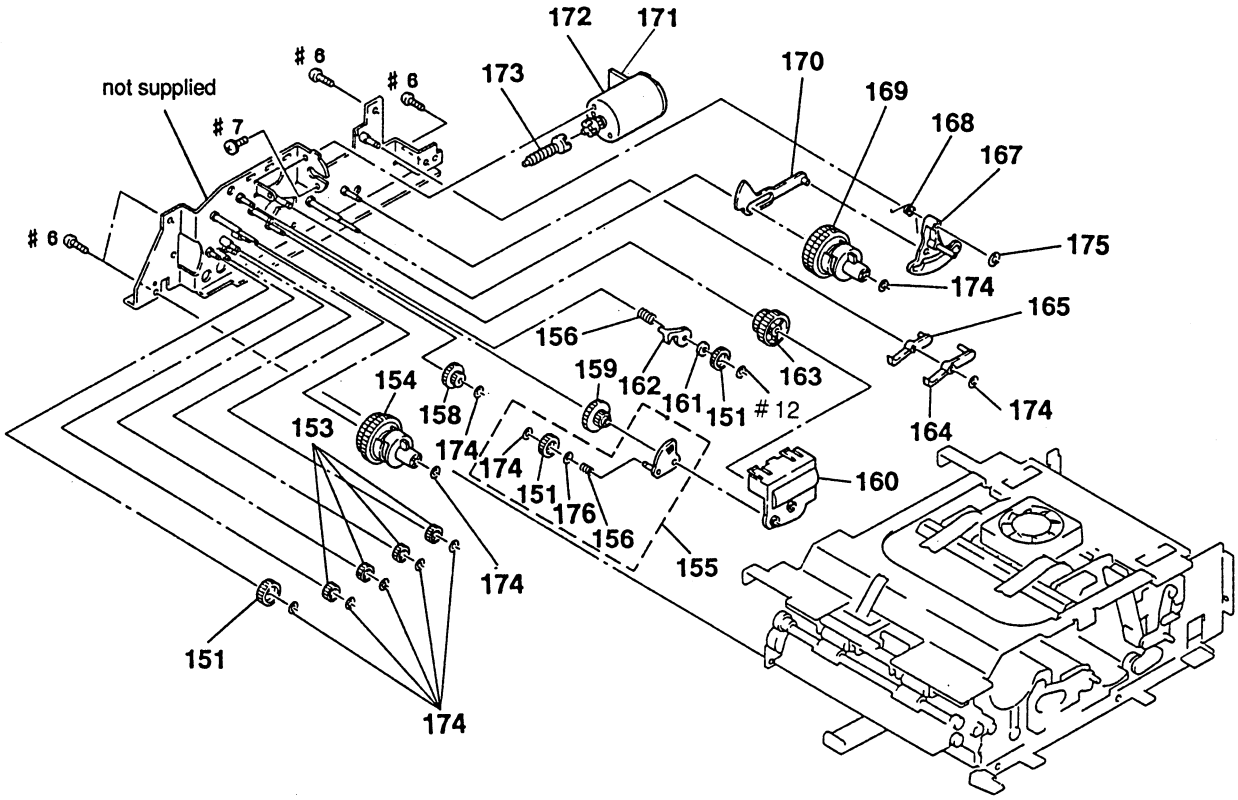
5-1-2. MECHANISM DECK-1



Ref. No.	Part No.	Description	Remarks
* 101	3-952-129-02	CLAMP, HEAD HARNESS	
* 102	A-7066-331-A	PP-14 BOARD, COMPLETE	
* 104	A-7066-333-A	HM-25 BOARD, COMPLETE	
105	X-3942-122-1	MOTOR ASSY, HEAD DRIVE	
* 106	3-950-017-01	HOLDER, HEAD DRIVE GEAR	
107	3-956-727-01	GEAR (E), HEAD DRIVE	
108	3-950-019-01	GEAR (A), HEAD DRIVE	
* 109	3-950-214-01	SHAFT (S), HEAD DRIVE GEAR	
110	3-950-015-01	GEAR (B), HEAD DRIVE	
* 111	3-950-020-01	SHAFT, HEAD DRIVE GEAR	

Ref. No.	Part No.	Description	Remarks
* 112	A-7066-330-A	HP-90 BOARD, COMPLETE	
113	3-962-697-01	LOCK, RIBBON DOOR	
116	A-7018-231-A	GUIDE BLOCK ASSY, CASSETTE	
117	3-951-831-01	LEVER, EJECT	
118	3-951-832-01	SPRING, TORSION	
120	A-7018-247-A	DOOR BLOCK ASSY, RIBBON	
121	3-945-884-01	SCREW (2X5)	
122	3-962-698-01	SPRING, COMPRESSION	
123	3-962-699-01	SPRING, COMPRESSION	
M903	X-3945-227-1	MOTOR ASSY, STEPPING	

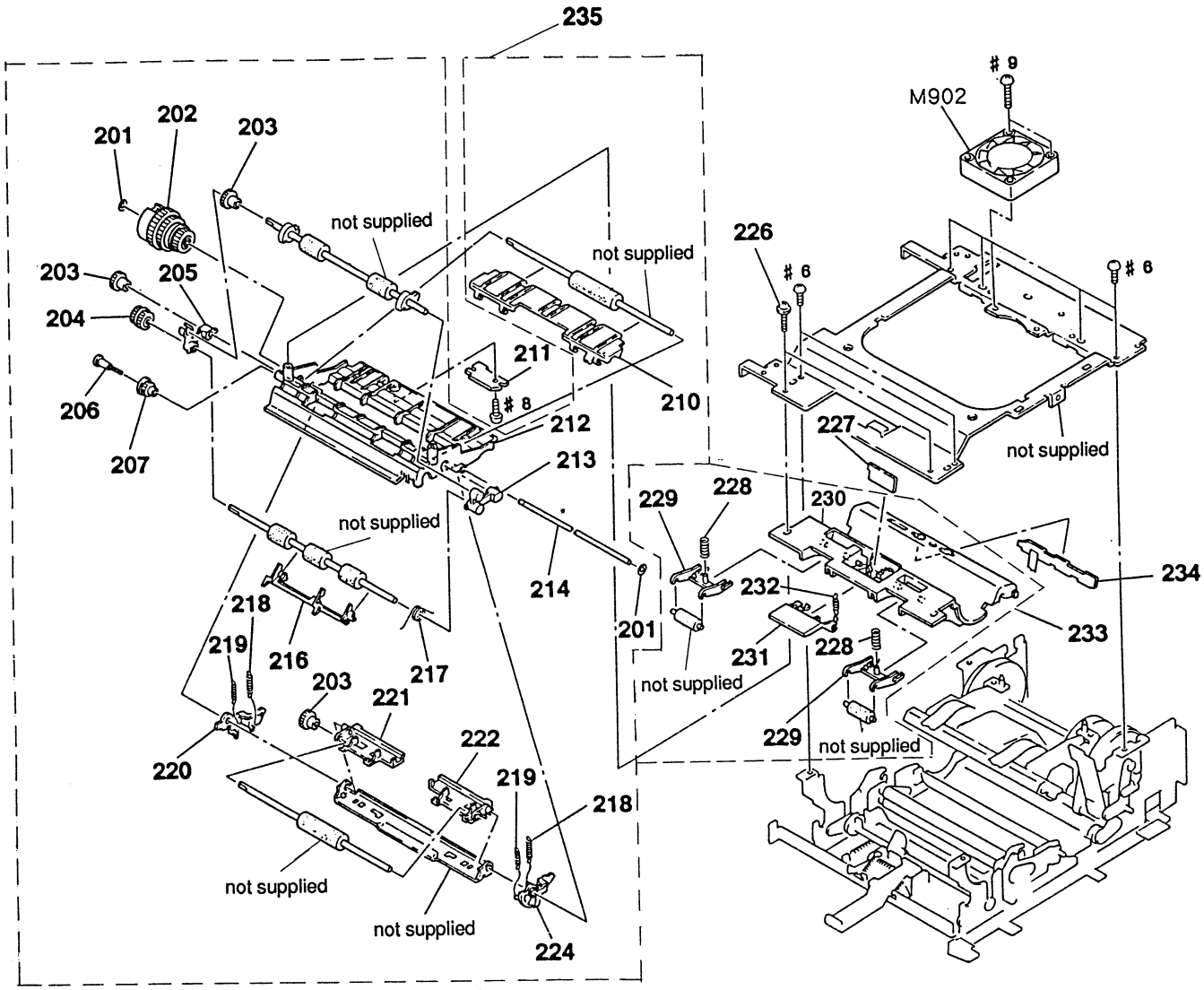
5-1-3. MECHANISM DECK-2



Ref. No.	Part No.	Description	Remarks
151	3-950-045-01	GEAR (20)	
153	3-949-935-01	GEAR (16)	
154	A-7018-137-A	REEL (T) BLOCK ASSY, RIBBON	
* 155	A-7018-136-A	ARM BLOCK ASSY, PENDULUM	
156	3-949-933-01	SPRING (PENDULUM), COMPRESSION	
158	3-950-048-01	GEAR, SPM IDLER	
159	3-950-040-01	GEAR (2), RD	
160	3-950-049-01	COVER, GEAR	
161	3-950-051-01	FELT, T LOCK	
* 162	3-950-046-01	ARM, T LOCK	
163	3-950-039-01	GEAR (1), RD	
* 164	3-950-036-01	CLAW, RIBBON LOCK	

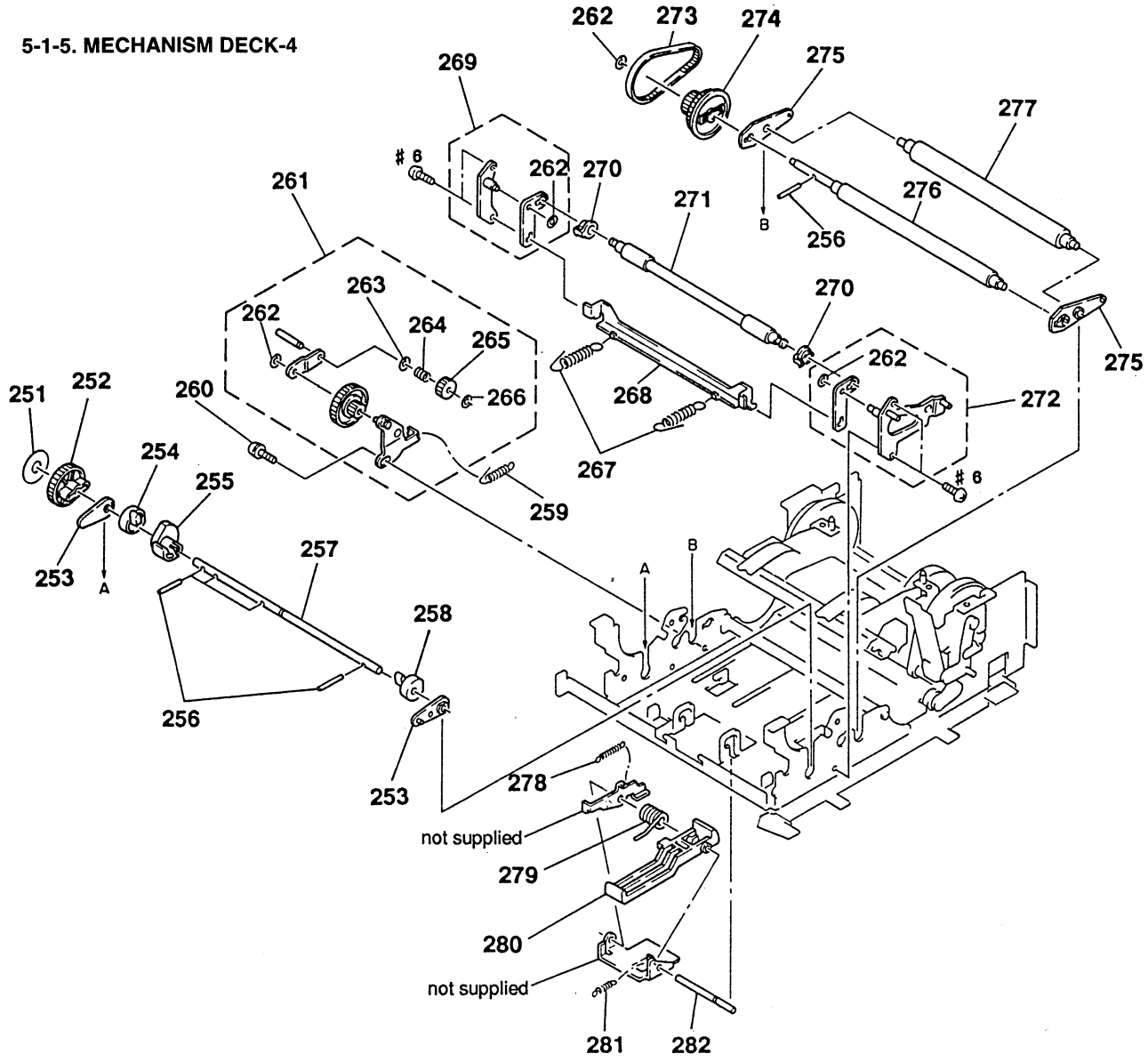
Ref. No.	Part No.	Description	Remarks
* 165	3-950-037-01	CLAW, RIBBON BRAKE	
* 167	X-3942-127-1	ARM ASSY, SLIDE	
168	3-950-050-01	SPRING, TORSION	
169	A-7018-138-A	REEL (S) BLOCK ASSY, RIBBON	
* 170	3-950-035-01	PLATE, SLIDE	
* 171	A-7066-332-A	RM-72 BOARD, COMPLETE	
172	X-3942-172-1	MOTOR ASSY, RIBBON	
173	3-183-992-01	GEAR, WORM	
174	3-669-465-01	WASHER (1.5), STOPPER	
175	3-669-596-01	WASHER (2.3), STOPPER	
176	3-701-440-01	WASHER, 3.5	

5-1-4. MECHANISM DECK-3



Ref. No.	Part No.	Description	Remarks
201	3-669-596-01	WASHER (2.3), STOPPER	
202	A-7018-141-A	LIMITER BLOCK ASSY	
203	3-949-987-01	GEAR (16D)	
204	3-949-988-01	GEAR (20-21)	
* 205	3-949-991-01	BEARING (L), PAPER	
206	3-950-001-01	SCREW, STEP	
207	3-949-989-01	GEAR (16F)	
* 210	3-949-985-01	SHUTTER, PAPER	
* 211	A-7066-334-A	PE-18 BOARD, COMPLETE	
* 212	3-949-992-01	GUIDE, PAPER	
* 213	3-949-993-01	BEARING (R), PAPER	
* 214	3-949-990-01	SHAFT, LIMITER	
* 216	3-949-986-01	RETAINER, PAPER	
217	3-949-995-01	RETAINER (SP), PAPER	
218	3-949-996-01	SPRING (RELEASE LEVER), TENSION	
219	3-949-994-01	SPRING, TENSION	
* 220	3-949-983-11	LEVER (L), RELEASE	
* 221	3-949-998-01	BEARING (L), SEPARATION ROLLER	
* 222	3-949-999-01	BEARING (R), SEPARATION ROLLER	
* 224	3-949-984-11	LEVER (R), RELEASE	
226	3-669-480-11	+ PTPWH 2	
* 227	A-7066-329-A	PJ-74 BOARD, COMPLETE	
228	3-950-013-01	SPRING, COMPRESSION	
229	3-950-010-01	ARM, PAPER ROLLER	
* 230	3-950-003-01	GUIDE (1), CASSETTE	
231	3-950-012-01	PLATE, SENSOR, PAPER	
232	3-965-386-01	SPRING (PLATE), TENSION	
233	A-7018-223-A	GUIDE (1) BLOCK ASSY, CASSETTE	
* 234	A-7066-326-A	MK-12 BOARD, COMPLETE	
235	A-7018-221-A	PREPARE PAPER BLOCK ASSY	
M902	1-698-534-11	MOTOR, DC (FAN)	

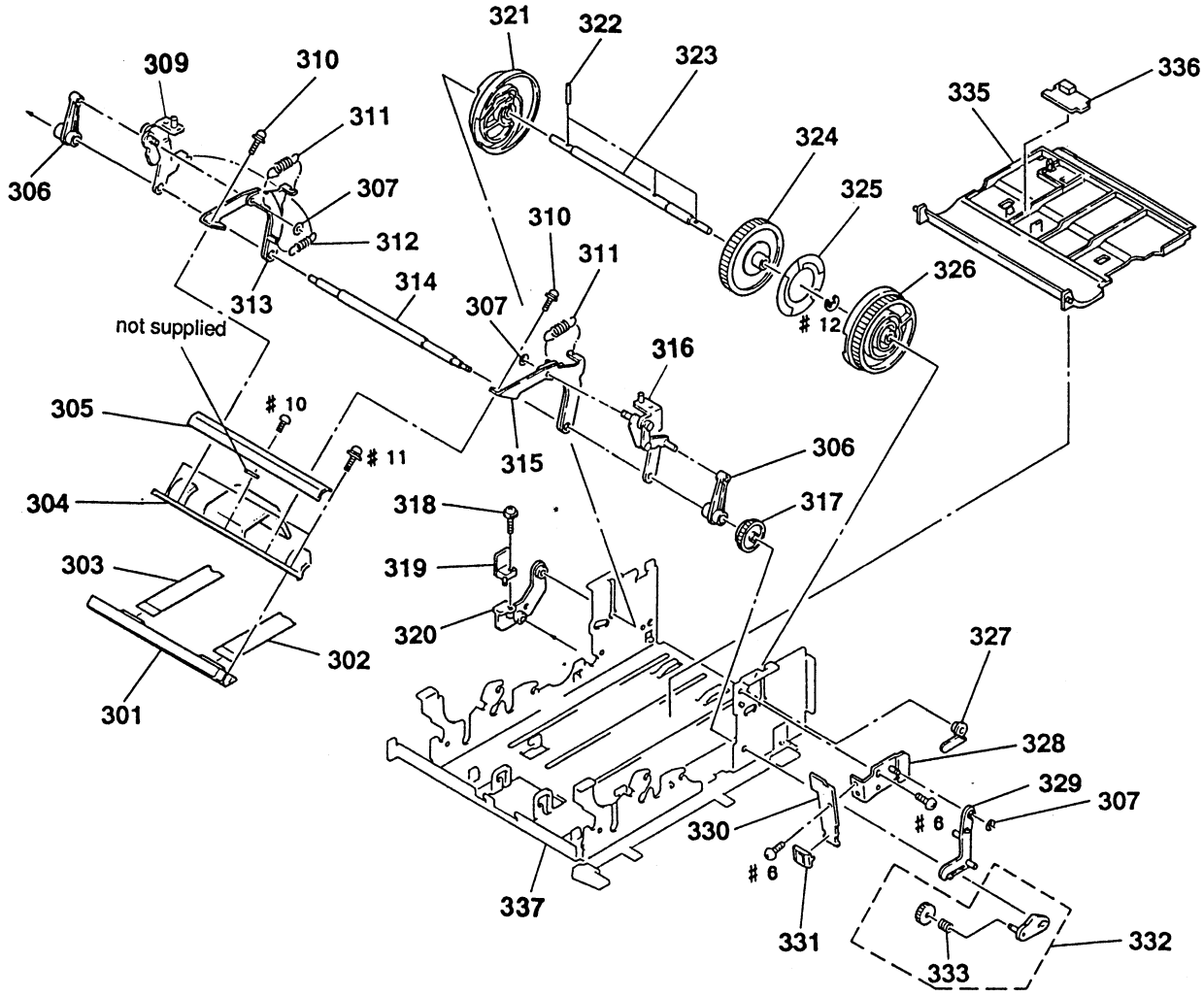
5-1-5. MECHANISM DECK-4



Ref. No.	Part No.	Description	Remarks
251	3-962-689-01	REFLECTOR, P	
252	3-949-951-01	GEAR, P DRIVING	
* 253	3-949-912-01	BEARING, PRESS	
* 254	3-949-948-01	CAM (L), RETAINER ROLLER PRESS	
* 255	3-949-943-01	CAM, PAPER	
256	3-949-911-01	PIN	
* 257	3-949-949-01	SHAFT, RETAINER ROLLER PRESS	
* 258	3-950-308-01	CAM (R), RETAINER ROLLER PRESS	
259	3-954-567-01	SPRING (TENSION PLATE), TENSION	
260	3-951-872-01	SCREW (2.6X6)	
261	A-7018-148-A	ARM BLOCK ASSY, TENSION	
262	4-926-219-02	RING (DIA.2.3), RETAINING	
263	3-701-441-01	WASHER	
264	3-949-933-01	SPRING (PENDULUM), COMPRESSION	
265	3-949-935-01	GEAR (16)	
266	3-681-678-00	WASHER, SLIT	

Ref. No.	Part No.	Description	Remarks
267	3-965-905-01	SPRING, TENSION	
* 268	3-949-939-01	PRESSURE, CAP	
* 269	A-7018-252-A	ARM (L) BLOCK ASSY, ROLLER	
270	3-949-937-01	BEARING, RETAINER ROLLER	
271	3-949-936-01	ROLLER, RETAINER	
* 272	A-7018-251-A	ARM (R) BLOCK ASSY, ROLLER	
273	3-949-915-01	BELT	
274	3-949-918-01	GEAR, CAPSTAN	
275	3-949-910-01	BEARING, PLATEN	
* 276	3-949-907-03	ROLLER, CAPSTAN	
277	3-962-729-01	ROLLER, PLATEN	
278	3-949-930-01	SPRING (LOCK LEVER), TENSION	
279	3-949-927-01	ARM (SP), PAPER	
* 280	3-949-919-01	ARM, PAPER	
281	3-949-929-01	SPRING (ARM), TENSION	
* 282	3-949-926-01	SHAFT, PAPER ARM	

5-1-6. MECHANISM DECK-5



Ref. No.	Part No.	Description	Remarks
301	1-500-207-11	HEAD, THERMAL	
302	1-769-140-11	CABLE, FLAT (FFC) (FFC-145) 12P	
303	1-769-139-11	CABLE, FLAT (FFC) (FFC-144) 10P	
* 304	3-962-694-01	HEAT SINK	
* 305	3-950-142-01	GUIDE, RIBBON	
306	3-949-917-01	LEVER, POWER	
307	4-926-219-02	RING (DIA.2.3), RETAINING	
* 309	X-3942-119-1	FULCRUM (L) ASSY, LINK	
310	3-669-607-11	+PSW (SMALL ROUND) (2.6)	
311	3-954-605-01	SPRING (HEAD), TENSION	
312	3-949-973-01	SPRING, TENSION	
* 313	X-3944-854-1	ARM ASSY (L), POWER	
* 314	3-949-950-01	SHAFT, POWER ARM	
* 315	X-3944-853-1	ARM ASSY (R), POWER	
* 316	X-3942-118-1	FULCRUM (R) ASSY, LINK	
317	3-950-077-01	GEAR (A), RING SWING	
318	3-669-480-11	+ PTPWH 2	
* 319	A-7066-328-A	CA-54 BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remarks
* 320	3-949-974-01	BEARING, HEAD ARM SHAFT	
321	3-962-692-01	CAM (L), HEAD POWER	
322	3-949-911-01	PIN	
323	3-962-690-01	SHAFT, CAM	
324	3-949-969-01	GEAR (C), HEAD DRIVE	
325	3-962-693-01	REFLECTOR, HP	
326	3-962-691-01	CAM (R), HEAD POWER	
327	3-949-916-01	BEARING, CAM SHAFT	
* 328	X-3942-121-1	ARM ASSY, LOCK	
* 329	3-950-022-01	ARM, LOCK	
* 330	A-7066-327-A	CO-24 BOARD, COMPLETE	
* 331	3-952-169-01	COVER, SENSOR	
332	A-7018-146-E	GEAR BLOCK ASSY, SWING	
333	3-965-985-01	SPRING, COMPRESSION	
* 335	3-949-909-01	GUIDE (2), CASSETTE	
* 336	A-7066-335-A	JD-1 BOARD, COMPLETE	
* 337	X-3944-855-1	CHASSIS ASSY, MECHANICAL	

5-2. ELECTRICAL PARTS LIST

NOTE:

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: μF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: μH
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA... , uPA... , μPA... ,
  uPB... , μPB... , uPC... , μPC... ,
  uPD..., μPD...

Ref. No.	Part No.	Description			Remarks
*	A-7066-564-A	AD-32 BOARD, COMPLETE			
		**********			
		(Ref.No.: 1,000 Series)			
		< CAPACITOR >			
C001	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C002	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C003	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C004	1-126-204-11	ELECT CHIP	47uF	20%	16V
C005	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C006	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C007	1-126-393-11	ELECT	33uF	20%	10V
C008	1-126-204-11	ELECT CHIP	47uF	20%	16V
C009	1-126-204-11	ELECT CHIP	47uF	20%	16V
C010	1-164-298-11	CERAMIC CHIP	0.15uF	10%	25V
C101	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C102	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C103	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C104	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C105	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C106	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C107	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C108	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C109	1-135-211-11	TANTAL. CHIP	6.8uF	10%	6.3V
C110	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C111	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C112	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C113	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C114	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
C115	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C116	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C117	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C118	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C120	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C121	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C122	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C123	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C124	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C125	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C126	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C127	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C128	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C129	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C130	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C131	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C132	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C133	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C134	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C135	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C136	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C137	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C138	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C139	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C140	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C141	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C142	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C144	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C145	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C146	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C147	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C148	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C150	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C151	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C152	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C153	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C156	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C200	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C201	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C202	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C203	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C204	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C205	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C206	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C207	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C208	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V

AD-32

Ref. No.	Part No.	Description			Remarks
C209	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C210	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C211	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C212	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C213	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C214	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C215	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C216	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C218	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C219	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C220	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C221	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C222	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C223	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C224	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C225	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C226	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C227	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C228	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C229	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C230	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C242	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C243	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C246	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C247	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C248	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C249	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C250	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C251	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C252	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C253	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C300	1-104-847-11	TANTAL. CHIP	22uF	10%	4V
C301	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C302	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C303	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C304	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C305	1-104-847-11	TANTAL. CHIP	22uF	10%	4V
C306	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C327	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C328	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C329	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C330	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C331	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C332	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C333	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C334	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C335	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C336	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C338	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C341	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C342	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C343	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C344	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C345	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C346	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C347	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C348	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C349	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C350	1-124-779-00	ELECT CHIP	10uF	20%	16V
C351	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C352	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C353	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C354	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C355	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C356	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C357	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C358	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C359	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C360	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C361	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C362	1-126-607-11	ELECT CHIP	47uF	20%	4V
C363	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C364	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C400	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C401	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C402	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C404	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C405	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C406	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C407	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C408	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C409	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C410	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C411	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C412	1-164-378-11	CERAMIC CHIP	30PF	5%	50V
C413	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
C420	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C435	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C436	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C437	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C438	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C439	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C440	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C441	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C442	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C443	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C444	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C445	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C446	1-164-699-11	CERAMIC CHIP	0.0033uF	5%	50V
C447	1-164-237-11	CERAMIC CHIP	16PF	5%	50V

Ref. No.	Part No.	Description			Remarks
C448	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C449	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C450	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C451	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C452	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
C453	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C502	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C503	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C504	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C505	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C506	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C507	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C508	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C509	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C510	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C511	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C512	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C513	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C514	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C515	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C516	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C517	1-128-357-11	ELECT CHIP	10uF	20%	16V
C518	1-126-393-11	ELECT	33uF	20%	10V
C519	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C520	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C521	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C522	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C523	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C524	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C525	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C526	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C527	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C528	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C529	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C530	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C531	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C532	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C533	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C534	1-164-173-11	CERAMIC CHIP	0.0039uF	10%	50V
C535	1-164-173-11	CERAMIC CHIP	0.0039uF	10%	50V
C536	1-164-173-11	CERAMIC CHIP	0.0039uF	10%	50V
C537	1-164-173-11	CERAMIC CHIP	0.0039uF	10%	50V
C538	1-124-779-00	ELECT CHIP	10uF	20%	16V
C539	1-124-779-00	ELECT CHIP	10uF	20%	16V
C540	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C543	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C545	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C546	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C590	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C591	1-126-205-11	ELECT CHIP	47uF	20%	6.3V

Ref. No.	Part No.	Description			Remarks
C592	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C593	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C594	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C595	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C601	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C602	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C603	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C604	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C605	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C606	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C607	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C608	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C609	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C610	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C611	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C612	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C613	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C614	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C615	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C616	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C617	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C618	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C620	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C621	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C622	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C623	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C624	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C625	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C626	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C627	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C628	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C629	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C630	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C631	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C632	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C633	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C635	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C638	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C639	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C640	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C641	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C642	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C643	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C644	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C645	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C646	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C647	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C648	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C652	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C653	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V

AD-32

Ref. No.	Part No.	Description			Remarks
C655	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C656	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C657	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C658	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C659	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C660	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C661	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C662	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C663	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C664	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C666	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C680	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C681	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C682	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C683	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C684	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C685	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C687	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C704	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C705	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C706	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C707	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C708	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C713	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C714	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C715	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C716	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C724	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C725	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C726	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C727	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C729	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C730	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C731	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C732	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C733	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C734	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C735	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C736	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C737	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C738	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C739	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C740	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C741	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C742	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C744	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C750	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C751	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C752	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C753	1-162-995-11	CERAMIC CHIP	0.022uF		50V

Ref. No.	Part No.	Description			Remarks
C754	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C756	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C757	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C758	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C760	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C761	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C762	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C763	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C764	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C765	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C766	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C767	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C768	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C769	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C770	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C771	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C772	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C773	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C774	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C779	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C780	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C781	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
C800	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C801	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C802	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C809	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C810	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C811	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C900	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C901	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C904	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C905	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C906	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C907	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C908	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C909	1-124-779-00	ELECT CHIP	10uF	20%	16V
C910	1-124-779-00	ELECT CHIP	10uF	20%	16V
C911	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C912	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C913	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C914	1-128-065-11	ELECT	68uF	20%	10V
C915	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C916	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C917	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C918	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C919	1-162-995-11	CERAMIC CHIP	0.022uF		50V

Ref. No.	Part No.	Description	Remarks
		< CONNECTOR >	
CN002	1-764-007-11	PIN, CONNECTOR (SMD) 12P	
CN003	1-580-789-21	PIN, CONNECTOR (SMD) 6P	
CN005	1-566-526-11	CONNECTOR, FPC (ZIF) 10P	
* CN006	1-564-011-11	PIN, CONNECTOR 12P	
CN008	1-580-789-21	PIN, CONNECTOR (SMD) 6P	
* CN009	1-580-056-21	PIN, CONNECTOR 3P	
* CN010	1-580-056-21	PIN, CONNECTOR (SMD) 3P	
CN011	1-566-521-11	CONNECTOR, FPC (ZIF) 5P	
* CN012	1-580-056-21	PIN, CONNECTOR 3P	
* CN013	1-580-055-21	PIN, CONNECTOR 2P	
* CN014	1-580-055-21	PIN, CONNECTOR 2P	
CN015	1-580-055-21	PIN, CONNECTOR 2P	
CN016	1-580-057-11	PIN, CONNECTOR 4P	
CN017	1-580-055-21	PIN, CONNECTOR 2P	
CN018	1-506-485-11	PIN, CONNECTOR 6P	
CN019	1-569-775-21	PIN, CONNECTOR 5P	
* CN020	1-580-056-21	PIN, CONNECTOR (SMD) 3P	
* CN021	1-580-056-21	PIN, CONNECTOR 3P	
		< JACK >	
CNJ100	1-770-288-11	CONNECTOR, ROUND TYPE (S VIDEO)	
		< TRIMMER >	
CT200	1-141-311-11	CAP, TRIMMER 20PF (FREERUN FREQUENCY)	
CT404	1-141-311-11	CAP, TRIMMER 20PF (910fh)	
		< DIODE >	
D100	8-719-421-59	DIODE MA3075WA-(TX)	
D101	8-719-421-59	DIODE MA3075WA-(TX)	
D102	8-719-421-59	DIODE MA3075WA-(TX)	
D103	8-719-421-59	DIODE MA3075WA-(TX)	
D105	8-719-421-59	DIODE MA3075WA-(TX)	
D106	8-719-421-59	DIODE MA3075WA-(TX)	
D110	8-719-914-43	DIODE DAN202K	
D201	8-719-914-43	DIODE DAN202K	
D301	8-719-914-43	DIODE DAN202K	
D400	8-719-421-59	DIODE MA3075WA-(TX)	
D401	8-719-404-16	DIODE MA713	
D402	8-719-002-81	DIODE 1T363	
D500	8-719-977-03	DIODE DTZ5.6B	
D505	8-719-421-15	DIODE MA8027-L	
D508	8-719-421-59	DIODE MA3075WA-(TX)	
D900	8-719-914-43	DIODE DAN202K	
		< FERRITE BEAD >	
EM100	1-543-948-11	BEAD, FERRITE (CHIP)	
EM101	1-543-948-11	BEAD, FERRITE (CHIP)	
EM602	1-543-948-11	BEAD, FERRITE (CHIP)	
EM603	1-543-948-11	BEAD, FERRITE (CHIP)	
EM604	1-543-948-11	BEAD, FERRITE (CHIP)	
EM605	1-543-948-11	BEAD, FERRITE (CHIP)	
EM700	1-543-948-11	BEAD, FERRITE (CHIP)	
EM900	1-543-948-11	BEAD, FERRITE (CHIP)	
EM901	1-543-948-11	BEAD, FERRITE (CHIP)	
EM902	1-543-948-11	BEAD, FERRITE (CHIP)	
EM903	1-543-948-11	BEAD, FERRITE (CHIP)	
EM904	1-543-948-11	BEAD, FERRITE (CHIP)	
EM905	1-543-948-11	BEAD, FERRITE (CHIP)	
EM906	1-543-948-11	BEAD, FERRITE (CHIP)	
		< FILTER >	
FL100	1-236-191-11	FILTER, BAND PASS	
FL101	1-239-564-11	FILTER, LOW PASS	
FL200	1-236-598-11	L.P.F (Y)	
FL201	1-236-598-11	L.P.F (Y)	
FL202	1-411-184-11	DELAY LINE, LC (415NS)	
FL301	1-239-565-11	FILTER, LOW PASS	
FL302	1-236-191-11	FILTER, BAND PASS	
FL303	1-406-452-11	COIL, OSC	
		< IC >	
IC001	8-759-157-17	IC PQ05SZ1U	
IC002	8-759-351-63	IC TA7812F(TE16L)	
IC100	8-752-055-31	IC CXA1201Q-T4	
IC101	8-759-710-12	IC NJM2230M	
IC102	8-752-352-20	IC CXD2023Q	
IC103	8-759-710-07	IC NJM2234M	
IC104	8-759-710-07	IC NJM2234M	
IC105	8-759-710-86	IC NJM2233BM	
IC106	8-759-031-84	IC SC7S04F	
IC200	8-759-631-08	IC M51279FP	
IC201	8-759-100-94	IC uPC358G2	
IC302	8-752-033-67	IC CXA1229M	
IC303	8-752-055-95	IC CXA1409AQ	
IC304	8-759-331-34	IC uPD6461GS-816-GLG-E2	
IC400	8-759-635-27	IC M62352GP	
IC401	8-759-331-06	IC BU2841AFS-E2	
IC402	8-759-032-11	IC MC74HC04AF	
IC403	8-759-987-20	IC CXD1229Q	
IC501	8-759-295-15	IC uPA1572H	
IC502	8-752-860-30	IC CXP80116-899Q	
IC503	8-759-988-13	IC LM393PS	
IC504	8-759-998-98	IC LM358D	
IC505	8-759-988-13	IC LM393PS	
IC506	8-759-154-84	IC HDC443V2	
IC507	8-759-343-29	IC HN62321AFLRL9	

AD-32

Ref. No.	Part No.	Description	Remarks
IC508	8-752-340-22	IC CXK5864BTM-12LL	
IC509	8-759-821-82	IC LB1644	
IC601	8-759-337-80	IC 74F32SJ-L1	
IC602	8-759-337-80	IC 74F32SJ-L1	
IC603	8-752-334-55	IC CXD1175AM	
IC604	8-752-334-55	IC CXD1175AM	
IC605	8-752-334-55	IC CXD1175AM	
IC606	8-759-011-65	IC MC74HC4053F	
IC609	8-752-338-46	IC CXD1178Q	
IC611	8-759-269-92	IC SN74HCU04ANS-E20	
IC612	8-759-011-65	IC MC74HC4053F	
IC680	8-759-007-72	IC MC74HC161F	
IC681	8-759-926-12	IC SN74HC139ANS	
IC682	8-759-032-56	IC MC74HC245AF	
IC683	8-759-032-56	IC MC74HC245AF	
IC684	8-759-032-56	IC MC74HC245AF	
IC685	8-759-032-14	IC MC74HC08AF	
IC686	8-759-032-14	IC MC74HC08AF	
IC687	8-759-032-11	IC MC74HC04AF	
IC701	8-759-337-75	IC uPD42S4260LE-70-E2	
IC703	8-759-337-83	IC HM514270ALJ7Z	
IC704	8-759-337-78	IC 74F04SJ-L1	
IC708	8-759-337-82	IC 74F86SJ-L1	
IC710	8-759-114-07	IC uPD65013GF-407-3BA	
IC711	8-759-114-09	IC uPD65006GF-250-3B8	
IC712	8-759-349-59	IC HD6435328RD98F	
IC713	8-759-032-11	IC MC74HC04AF	
IC715	8-759-053-96	IC CXD8328Q	
IC750	8-759-337-80	IC 74F32SJ-L1	
IC751	8-759-337-79	IC 74F08SJ-L1	
IC752	8-759-337-77	IC 74F257ASJ-L1	
IC753	8-759-337-80	IC 74F32SJ-L1	
IC754	8-759-337-81	IC 74F74SJ-L1	
IC755	8-759-337-78	IC 74F04SJ-L1	
IC756	8-759-337-80	IC 74F32SJ-L1	
IC758	8-759-337-79	IC 74F08SJ-L1	
IC761	8-759-337-76	IC 74F163ASJ-L1	
IC800	8-759-343-28	IC HN62321AFLRL8	
IC805	8-759-032-20	IC MC74HC32AF	
IC806	8-759-032-11	IC MC74HC04AF	
IC807	8-759-032-20	IC MC74HC32AF	
IC900	8-759-059-05	IC TL1596CPW-ELM1000	
IC901	8-759-355-96	IC MB89091PFV-G-111-BND	
IC902	8-759-937-56	IC S-8054ALB-LM-S	
IC903	8-759-278-57	IC AK6420HF-E2	
		< JACK >	
J100	1-565-276-21	JACK, ULTRA SMALL 1P (LANC)	
J101	1-563-866-51	JACK, PIN 1P (MONITOR OUT)	
J102	1-563-866-51	JACK, PIN 1P (VIDEO)	

Ref. No.	Part No.	Description	Remarks
		< COIL >	
L001	1-500-288-11	BEAD, FERRITE (CHIP)	
L002	1-543-775-11	FILTER, EMI	
L003	1-543-775-11	FILTER, EMI	
L004	1-543-775-11	FILTER, EMI	
L005	1-543-775-11	FILTER, EMI	
L006	1-543-775-11	FILTER, EMI	
L007	1-543-775-11	FILTER, EMI	
L008	1-543-775-11	FILTER, EMI	
L009	1-543-775-11	FILTER, EMI	
L010	1-543-775-11	FILTER, EMI	
L011	1-543-775-11	FILTER, EMI	
L012	1-543-775-11	FILTER, EMI	
L013	1-543-775-11	FILTER, EMI	
L014	1-543-775-11	FILTER, EMI	
L015	1-543-775-11	FILTER, EMI	
L018	1-543-775-11	FILTER, EMI	
L019	1-543-775-11	FILTER, EMI	
L020	1-543-775-11	FILTER, EMI	
L100	1-410-389-31	INDUCTOR CHIP 47uH	
L101	1-410-381-11	INDUCTOR CHIP 10uH	
L103	1-410-389-31	INDUCTOR CHIP 47uH	
L104	1-410-389-31	INDUCTOR CHIP 47uH	
L105	1-410-389-31	INDUCTOR CHIP 47uH	
L200	1-410-389-31	INDUCTOR CHIP 47uH	
L201	1-410-389-31	INDUCTOR CHIP 47uH	
L202	1-410-389-31	INDUCTOR CHIP 47uH	
L204	1-410-381-11	INDUCTOR CHIP 10uH	
L301	1-410-389-31	INDUCTOR CHIP 47uH	
L302	1-410-389-31	INDUCTOR CHIP 47uH	
L303	1-410-389-31	INDUCTOR CHIP 47uH	
L304	1-410-389-31	INDUCTOR CHIP 47uH	
L400	1-410-389-31	INDUCTOR CHIP 47uH	
L401	1-410-389-31	INDUCTOR CHIP 47uH	
L402	1-410-389-31	INDUCTOR CHIP 47uH	
L408	1-410-389-31	INDUCTOR CHIP 47uH	
L409	1-410-377-31	INDUCTOR CHIP 4.7uH	
L411	1-410-383-31	INDUCTOR CHIP 15uH	
		< IC LINK >	
⚠PS1	1-576-124-11	LINK, IC	
		< TRANSISTOR >	
Q102	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q103	8-729-402-84	TRANSISTOR XN4601	
Q104	8-729-402-84	TRANSISTOR XN4601	
Q105	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q106	8-729-402-84	TRANSISTOR XN4601	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description		Remarks
Q107	8-729-901-01	TRANSISTOR	DTC144EK	
Q108	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q110	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q201	8-729-901-03	TRANSISTOR	DTC144WK	
Q202	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q203	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q204	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q205	8-729-901-03	TRANSISTOR	DTC144WK	
Q218	8-729-402-81	TRANSISTOR	XN4501	
Q219	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q300	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q301	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q302	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q303	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q304	8-729-216-22	TRANSISTOR	2SA1162	
Q305	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q306	8-729-402-81	TRANSISTOR	XN4501	
Q311	8-729-402-84	TRANSISTOR	XN4601	
Q313	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q314	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q315	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q501	8-729-027-44	TRANSISTOR	DTC114TKA	
Q502	8-729-140-75	TRANSISTOR	2SD999-CLCK	
Q600	8-729-402-84	TRANSISTOR	XN4601	
Q601	8-729-402-84	TRANSISTOR	XN4601	
Q602	8-729-402-84	TRANSISTOR	XN4601	
Q603	8-729-402-84	TRANSISTOR	XN4601	
Q604	8-729-402-84	TRANSISTOR	XN4601	
Q605	8-729-402-84	TRANSISTOR	XN4601	
Q606	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q607	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q608	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q611	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q612	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q613	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q614	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q615	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q616	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q617	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q618	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q619	8-729-216-22	TRANSISTOR	2SA1162-G	
Q620	8-729-216-22	TRANSISTOR	2SA1162-G	
Q621	8-729-216-22	TRANSISTOR	2SA1162-G	
Q622	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q623	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q624	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q901	8-729-216-22	TRANSISTOR	2SA1162-G	

Ref. No.	Part No.	Description				Remarks
		< RESISTOR >				
R102	1-216-864-11	METAL CHIP	0	5%	1/16W	
R103	1-216-864-11	METAL CHIP	0	5%	1/16W	
R104	1-216-804-11	METAL CHIP	39	5%	1/16W	
R105	1-216-804-11	METAL CHIP	39	5%	1/16W	
R106	1-216-864-11	METAL CHIP	0	5%	1/16W	
R107	1-216-804-11	METAL CHIP	39	5%	1/16W	
R108	1-216-804-11	METAL CHIP	39	5%	1/16W	
R109	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R110	1-218-285-11	METAL GLAZE	75	5%	1/16W	
R111	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R114	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R115	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R116	1-216-817-11	METAL CHIP	470	5%	1/16W	
R117	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R119	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R120	1-216-864-11	METAL CHIP	0	5%	1/16W	
R122	1-218-285-11	METAL GLAZE	75	5%	1/16W	
R123	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R124	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R125	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R126	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R127	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R128	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R129	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R130	1-218-830-11	METAL GLAZE	200	0.50%	1/16W	
R131	1-218-830-11	METAL GLAZE	200	0.50%	1/16W	
R132	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R134	1-216-819-11	METAL CHIP	680	5%	1/16W	
R135	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R136	1-216-819-11	METAL CHIP	680	5%	1/16W	
R137	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R138	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R139	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R140	1-216-813-11	METAL CHIP	220	5%	1/16W	
R141	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R144	1-216-819-11	METAL CHIP	680	5%	1/16W	
R145	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R146	1-216-811-11	METAL CHIP	150	5%	1/16W	
R147	1-216-864-11	METAL CHIP	0	5%	1/16W	
R148	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R149	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R150	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R151	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R153	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R155	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R156	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R160	1-216-813-11	METAL CHIP	220	5%	1/16W	
R161	1-216-813-11	METAL CHIP	220	5%	1/16W	
R162	1-216-864-11	METAL CHIP	0	5%	1/16W	
R165	1-216-864-11	METAL CHIP	0	5%	1/16W	

AD-32

Ref. No.	Part No.	Description			Remarks
R166	1-216-819-11	METAL CHIP	680	5%	1/16W
R167	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R168	1-216-809-11	METAL CHIP	100	5%	1/16W
R169	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R170	1-216-813-11	METAL CHIP	220	5%	1/16W
R171	1-216-815-11	METAL CHIP	330	5%	1/16W
R173	1-216-839-11	METAL CHIP	33K	5%	1/16W
R174	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R175	1-216-837-11	METAL CHIP	22K	5%	1/16W
R176	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R201	1-216-840-11	METAL CHIP	39K	5%	1/16W
R204	1-216-838-11	METAL CHIP	27K	5%	1/16W
R205	1-216-839-11	METAL CHIP	33K	5%	1/16W
R206	1-202-930-11	METAL GLAZE	750K	5%	1/16W
R207	1-216-844-11	METAL CHIP	82K	5%	1/16W
R208	1-216-836-11	METAL CHIP	18K	5%	1/16W
R209	1-216-857-11	METAL CHIP	1M	5%	1/16W
R210	1-216-817-11	METAL CHIP	470	5%	1/16W
R212	1-216-864-11	METAL CHIP	0	5%	1/16W
R213	1-216-850-11	METAL CHIP	270K	5%	1/16W
R214	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R215	1-220-151-11	METAL GLAZE	51	5%	1/16W
R216	1-216-815-11	METAL CHIP	330	5%	1/16W
R218	1-216-813-11	METAL CHIP	220	5%	1/16W
R219	1-216-813-11	METAL CHIP	220	5%	1/16W
R220	1-216-839-11	METAL CHIP	33K	5%	1/16W
R221	1-216-837-11	METAL CHIP	22K	5%	1/16W
R222	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R223	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R224	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R225	1-216-821-11	METAL CHIP	1K	5%	1/16W
R226	1-216-821-11	METAL CHIP	1K	5%	1/16W
R227	1-216-821-11	METAL CHIP	1K	5%	1/16W
R228	1-216-845-11	METAL CHIP	100K	5%	1/16W
R229	1-216-845-11	METAL CHIP	100K	5%	1/16W
R230	1-216-845-11	METAL CHIP	100K	5%	1/16W
R231	1-216-841-11	METAL CHIP	47K	5%	1/16W
R232	1-216-845-11	METAL CHIP	100K	5%	1/16W
R233	1-216-845-11	METAL CHIP	100K	5%	1/16W
R234	1-216-845-11	METAL CHIP	100K	5%	1/16W
R235	1-216-821-11	METAL CHIP	1K	5%	1/16W
R236	1-216-821-11	METAL CHIP	1K	5%	1/16W
R237	1-216-821-11	METAL CHIP	1K	5%	1/16W
R238	1-216-845-11	METAL CHIP	100K	5%	1/16W
R239	1-216-864-11	METAL CHIP	0	5%	1/16W
R269	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R270	1-216-841-11	METAL CHIP	47K	5%	1/16W
R271	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R272	1-216-835-11	METAL CHIP	15K	5%	1/16W
R273	1-216-821-11	METAL CHIP	1K	5%	1/16W
R274	1-216-821-11	METAL CHIP	1K	5%	1/16W
R275	1-216-817-11	METAL CHIP	470	5%	1/16W
R276	1-216-817-11	METAL CHIP	470	5%	1/16W
R279	1-216-821-11	METAL CHIP	1K	5%	1/16W
R280	1-216-841-11	METAL CHIP	47K	5%	1/16W
R281	1-216-841-11	METAL CHIP	47K	5%	1/16W
R283	1-216-821-11	METAL CHIP	1K	5%	1/16W
R284	1-216-839-11	METAL CHIP	33K	5%	1/16W
R285	1-216-841-11	METAL CHIP	47K	5%	1/16W
R286	1-218-887-11	METAL CHIP	47K	0.50%	1/16W
R287	1-216-839-11	METAL CHIP	33K	5%	1/16W
R288	1-218-895-11	METAL CHIP	100K	0.50%	1/16W
R289	1-216-845-11	METAL CHIP	100K	5%	1/16W
R290	1-216-821-11	METAL CHIP	1K	5%	1/16W
R300	1-216-809-11	METAL CHIP	100	5%	1/16W
R301	1-216-811-11	METAL CHIP	150	5%	1/16W
R302	1-216-821-11	METAL CHIP	1K	5%	1/16W
R303	1-216-820-11	METAL CHIP	820	5%	1/16W
R304	1-216-841-11	METAL CHIP	47K	5%	1/16W
R305	1-216-864-11	METAL CHIP	0	5%	1/16W
R306	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R307	1-216-864-11	METAL CHIP	0	5%	1/16W
R308	1-216-845-11	METAL CHIP	100K	5%	1/16W
R309	1-216-840-11	METAL CHIP	39K	5%	1/16W
R310	1-216-835-11	METAL CHIP	15K	5%	1/16W
R313	1-216-848-11	METAL CHIP	180K	5%	1/16W
R316	1-216-845-11	METAL CHIP	100K	5%	1/16W
R317	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R318	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R319	1-218-856-11	METAL CHIP	2.4K	0.50%	1/16W
R320	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R326	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R346	1-216-864-11	METAL CHIP	0	5%	1/16W
R349	1-216-821-11	METAL CHIP	1K	5%	1/16W
R350	1-216-821-11	METAL CHIP	1K	5%	1/16W
R351	1-216-821-11	METAL CHIP	1K	5%	1/16W
R352	1-218-881-11	METAL CHIP	27K	0.50%	1/16W
R355	1-216-833-11	METAL CHIP	10K	5%	1/16W
R356	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R357	1-216-841-11	METAL CHIP	47K	5%	1/16W
R358	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R359	1-216-821-11	METAL CHIP	1K	5%	1/16W
R364	1-218-285-11	METAL GLAZE	75	5%	1/16W
R365	1-216-821-11	METAL CHIP	1K	5%	1/16W
R366	1-216-821-11	METAL CHIP	1K	5%	1/16W
R367	1-216-821-11	METAL CHIP	1K	5%	1/16W
R368	1-216-811-11	METAL CHIP	150	5%	1/16W
R369	1-216-806-11	METAL GLAZE	56	5%	1/16W
R370	1-216-821-11	METAL CHIP	1K	5%	1/16W
R371	1-216-829-11	METAL CHIP	4.7K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R373	1-216-809-11	METAL CHIP	100	5%	1/16W
R374	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R375	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R377	1-216-821-11	METAL CHIP	1K	5%	1/16W
R378	1-216-809-11	METAL CHIP	100	5%	1/16W
R379	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R380	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R381	1-216-821-11	METAL CHIP	1K	5%	1/16W
R382	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R383	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R384	1-216-820-11	METAL CHIP	820	5%	1/16W
R385	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R386	1-216-819-11	METAL CHIP	680	5%	1/16W
R387	1-216-819-11	METAL CHIP	680	5%	1/16W
R388	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R389	1-216-841-11	METAL CHIP	47K	5%	1/16W
R391	1-216-819-11	METAL CHIP	680	5%	1/16W
R392	1-216-818-11	METAL CHIP	560	5%	1/16W
R393	1-216-839-11	METAL CHIP	33K	5%	1/16W
R394	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R395	1-216-837-11	METAL CHIP	22K	5%	1/16W
R396	1-216-817-11	METAL CHIP	470	5%	1/16W
R397	1-216-833-11	METAL CHIP	10K	5%	1/16W
R398	1-216-819-11	METAL CHIP	680	5%	1/16W
R399	1-216-841-11	METAL CHIP	47K	5%	1/16W
R400	1-216-813-11	METAL CHIP	220	5%	1/16W
R401	1-216-841-11	METAL CHIP	47K	5%	1/16W
R407	1-216-837-11	METAL CHIP	22K	5%	1/16W
R408	1-216-813-11	METAL CHIP	220	5%	1/16W
R409	1-216-813-11	METAL CHIP	220	5%	1/16W
R410	1-216-864-11	METAL CHIP	0	5%	1/16W
R415	1-216-841-11	METAL CHIP	47K	5%	1/16W
R416	1-216-850-11	METAL CHIP	270K	5%	1/16W
R417	1-216-850-11	METAL CHIP	270K	5%	1/16W
R418	1-216-841-11	METAL CHIP	47K	5%	1/16W
R420	1-218-856-11	METAL CHIP	2.4K	0.50%	1/16W
R421	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R447	1-216-864-11	METAL CHIP	0	5%	1/16W
R448	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R449	1-216-804-11	METAL CHIP	39	5%	1/16W
R451	1-216-864-11	METAL CHIP	0	5%	1/16W
R452	1-216-821-11	METAL CHIP	1K	5%	1/16W
R453	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R454	1-216-804-11	METAL CHIP	39	5%	1/16W
R455	1-216-855-11	METAL CHIP	680K	5%	1/16W
R456	1-216-821-11	METAL CHIP	1K	5%	1/16W
R457	1-216-839-11	METAL CHIP	33K	5%	1/16W
R458	1-216-839-11	METAL CHIP	33K	5%	1/16W
R459	1-216-833-11	METAL CHIP	10K	5%	1/16W
R460	1-216-839-11	METAL CHIP	33K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R461	1-216-833-11	METAL CHIP	10K	5%	1/16W
R462	1-216-821-11	METAL CHIP	1K	5%	1/16W
R463	1-218-844-11	METAL CHIP	750	0.50%	1/16W
R464	1-216-839-11	METAL CHIP	33K	5%	1/16W
R465	1-216-821-11	METAL CHIP	1K	5%	1/16W
R466	1-216-817-11	METAL CHIP	470	5%	1/16W
R467	1-216-818-11	METAL CHIP	560	5%	1/16W
R468	1-216-821-11	METAL CHIP	1K	5%	1/16W
R501	1-216-813-11	METAL CHIP	220	5%	1/16W
R502	1-216-813-11	METAL CHIP	220	5%	1/16W
R504	1-216-813-11	METAL CHIP	220	5%	1/16W
R506	1-216-838-11	METAL CHIP	27K	5%	1/16W
R507	1-216-841-11	METAL CHIP	47K	5%	1/16W
R508	1-216-833-11	METAL CHIP	10K	5%	1/16W
R509	1-216-841-11	METAL CHIP	47K	5%	1/16W
R510	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R511	1-216-841-11	METAL CHIP	47K	5%	1/16W
R512	1-216-841-11	METAL CHIP	47K	5%	1/16W
R513	1-216-833-11	METAL CHIP	10K	5%	1/16W
R514	1-216-841-11	METAL CHIP	47K	5%	1/16W
R515	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R516	1-216-813-11	METAL CHIP	220	5%	1/16W
R517	1-216-852-11	METAL CHIP	390K	5%	1/16W
R518	1-216-852-11	METAL CHIP	390K	5%	1/16W
R519	1-216-852-11	METAL CHIP	390K	5%	1/16W
R520	1-216-852-11	METAL CHIP	390K	5%	1/16W
R521	1-216-845-11	METAL CHIP	100K	5%	1/16W
R522	1-216-845-11	METAL CHIP	100K	5%	1/16W
R523	1-216-845-11	METAL CHIP	100K	5%	1/16W
R524	1-216-845-11	METAL CHIP	100K	5%	1/16W
R525	1-216-813-11	METAL CHIP	220	5%	1/16W
R526	1-216-841-11	METAL CHIP	47K	5%	1/16W
R527	1-216-813-11	METAL CHIP	220	5%	1/16W
R528	1-216-813-11	METAL CHIP	220	5%	1/16W
R529	1-216-837-11	METAL CHIP	22K	5%	1/16W
R530	1-216-837-11	METAL CHIP	22K	5%	1/16W
R531	1-216-813-11	METAL CHIP	220	5%	1/16W
R532	1-216-841-11	METAL CHIP	47K	5%	1/16W
R533	1-216-841-11	METAL CHIP	47K	5%	1/16W
R534	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R535	1-216-841-11	METAL CHIP	47K	5%	1/16W
R536	1-216-849-11	METAL CHIP	220K	5%	1/16W
R537	1-216-837-11	METAL CHIP	22K	5%	1/16W
R538	1-216-837-11	METAL CHIP	22K	5%	1/16W
R539	1-216-839-11	METAL CHIP	33K	5%	1/16W
R540	1-216-841-11	METAL CHIP	47K	5%	1/16W
R541	1-216-833-11	METAL CHIP	10K	5%	1/16W
R542	1-216-849-11	METAL CHIP	220K	5%	1/16W
R543	1-216-841-11	METAL CHIP	47K	5%	1/16W
R544	1-216-833-11	METAL CHIP	10K	5%	1/16W

AD-32

Ref. No.	Part No.	Description			Remarks
R545	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R546	1-216-854-11	METAL CHIP	560K	5%	1/16W
R547	1-216-841-11	METAL CHIP	47K	5%	1/16W
R548	1-216-833-11	METAL CHIP	10K	5%	1/16W
R549	1-216-833-11	METAL CHIP	10K	5%	1/16W
R550	1-216-833-11	METAL CHIP	10K	5%	1/16W
R551	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R553	1-216-839-11	METAL CHIP	33K	5%	1/16W
R554	1-216-815-11	METAL CHIP	330	5%	1/16W
R559	1-216-833-11	METAL CHIP	10K	5%	1/16W
R560	1-218-871-11	METAL CHIP	10K	0.50%	1/16W
R564	1-216-833-11	METAL CHIP	10K	5%	1/16W
R565	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R566	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R567	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R568	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R572	1-216-821-11	METAL CHIP	1K	5%	1/16W
R573	1-216-864-11	METAL CHIP	0	5%	1/16W
R574	1-216-864-11	METAL CHIP	0	5%	1/16W
R575	1-216-821-11	METAL CHIP	1K	5%	1/16W
R576	1-216-821-11	METAL CHIP	1K	5%	1/16W
R577	1-216-819-11	METAL CHIP	680	5%	1/16W
R578	1-216-837-11	METAL CHIP	22K	5%	1/16W
R579	1-216-839-11	METAL CHIP	33K	5%	1/16W
R580	1-216-833-11	METAL CHIP	10K	5%	1/16W
R581	1-216-841-11	METAL CHIP	47K	5%	1/16W
R582	1-216-849-11	METAL CHIP	220K	5%	1/16W
R583	1-216-821-11	METAL CHIP	1K	5%	1/16W
R585	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R586	1-216-841-11	METAL CHIP	47K	5%	1/16W
R591	1-216-813-11	METAL CHIP	220	5%	1/16W
R592	1-216-813-11	METAL CHIP	220	5%	1/16W
R593	1-216-821-11	METAL CHIP	1K	5%	1/16W
R599	1-216-833-11	METAL CHIP	10K	5%	1/16W
R600	1-216-841-11	METAL CHIP	47K	5%	1/16W
R601	1-216-834-11	METAL CHIP	12K	5%	1/16W
R602	1-216-841-11	METAL CHIP	47K	5%	1/16W
R603	1-218-330-11	METAL GLAZE	11K	5%	1/16W
R604	1-216-841-11	METAL CHIP	47K	5%	1/16W
R605	1-216-833-11	METAL CHIP	10K	5%	1/16W
R606	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R607	1-216-817-11	METAL CHIP	470	5%	1/16W
R608	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R609	1-216-817-11	METAL CHIP	470	5%	1/16W
R610	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R611	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R612	1-216-817-11	METAL CHIP	470	5%	1/16W
R613	1-218-862-11	METAL CHIP	4.3K	0.50%	1/16W
R614	1-216-813-11	METAL CHIP	220	5%	1/16W
R615	1-216-827-11	METAL CHIP	3.3K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R616	1-216-813-11	METAL CHIP	220	5%	1/16W
R617	1-216-813-11	METAL CHIP	220	5%	1/16W
R618	1-216-818-11	METAL CHIP	560	5%	1/16W
R619	1-216-818-11	METAL CHIP	560	5%	1/16W
R620	1-216-818-11	METAL CHIP	560	5%	1/16W
R621	1-216-817-11	METAL CHIP	470	5%	1/16W
R622	1-216-817-11	METAL CHIP	470	5%	1/16W
R623	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R624	1-216-805-11	METAL CHIP	47	5%	1/16W
R625	1-216-811-11	METAL CHIP	150	5%	1/16W
R626	1-216-805-11	METAL CHIP	47	5%	1/16W
R627	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R628	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R629	1-216-809-11	METAL CHIP	100	5%	1/16W
R630	1-216-833-11	METAL CHIP	10K	5%	1/16W
R633	1-216-821-11	METAL CHIP	1K	5%	1/16W
R634	1-216-809-11	METAL CHIP	100	5%	1/16W
R635	1-216-813-11	METAL CHIP	220	5%	1/16W
R636	1-216-812-11	METAL CHIP	180	5%	1/16W
R637	1-216-821-11	METAL CHIP	1K	5%	1/16W
R638	1-216-817-11	METAL CHIP	470	5%	1/16W
R639	1-216-813-11	METAL CHIP	220	5%	1/16W
R640	1-216-805-11	METAL CHIP	47	5%	1/16W
R641	1-216-813-11	METAL CHIP	220	5%	1/16W
R642	1-216-841-11	METAL CHIP	47K	5%	1/16W
R644	1-216-805-11	METAL CHIP	47	5%	1/16W
R645	1-216-805-11	METAL CHIP	47	5%	1/16W
R646	1-216-805-11	METAL CHIP	47	5%	1/16W
R647	1-216-805-11	METAL CHIP	47	5%	1/16W
R649	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R650	1-218-830-11	METAL GLAZE	200	0.50%	1/16W
R651	1-218-830-11	METAL GLAZE	200	0.50%	1/16W
R652	1-218-830-11	METAL GLAZE	200	0.50%	1/16W
R657	1-216-817-11	METAL CHIP	470	5%	1/16W
R658	1-216-833-11	METAL CHIP	10K	5%	1/16W
R659	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R660	1-216-857-11	METAL CHIP	1M	5%	1/16W
R661	1-216-857-11	METAL CHIP	1M	5%	1/16W
R662	1-216-815-11	METAL CHIP	330	5%	1/16W
R663	1-216-809-11	METAL CHIP	100	5%	1/16W
R664	1-216-833-11	METAL CHIP	10K	5%	1/16W
R665	1-216-835-11	METAL CHIP	15K	5%	1/16W
R666	1-216-833-11	METAL CHIP	10K	5%	1/16W
R667	1-216-857-11	METAL CHIP	1M	5%	1/16W
R668	1-216-813-11	METAL CHIP	220	5%	1/16W
R669	1-216-813-11	METAL CHIP	220	5%	1/16W
R670	1-218-831-11	METAL GLAZE	220	0.50%	1/16W
R671	1-216-835-11	METAL CHIP	15K	5%	1/16W
R672	1-216-833-11	METAL CHIP	10K	5%	1/16W
R673	1-216-813-11	METAL CHIP	220	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R674	1-216-813-11	METAL CHIP	220	5%	1/16W
R675	1-218-831-11	METAL GLAZE	220	0.50%	1/16W
R676	1-216-864-11	METAL CHIP	0	5%	1/16W
R677	1-216-864-11	METAL CHIP	0	5%	1/16W
R678	1-216-813-11	METAL CHIP	220	5%	1/16W
R679	1-216-813-11	METAL CHIP	220	5%	1/16W
R680	1-216-813-11	METAL CHIP	220	5%	1/16W
R681	1-216-841-11	METAL CHIP	47K	5%	1/16W
R682	1-216-864-11	METAL CHIP	0	5%	1/16W
R683	1-218-823-11	METAL GLAZE	100	0.50%	1/16W
R684	1-218-823-11	METAL GLAZE	100	0.50%	1/16W
R685	1-218-823-11	METAL GLAZE	100	0.50%	1/16W
R687	1-216-833-11	METAL CHIP	10K	5%	1/16W
R688	1-216-833-11	METAL CHIP	10K	5%	1/16W
R690	1-216-864-11	METAL CHIP	0	5%	1/16W
R692	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R694	1-216-833-11	METAL CHIP	10K	5%	1/16W
R695	1-216-809-11	METAL CHIP	100	5%	1/16W
R696	1-216-817-11	METAL CHIP	470	5%	1/16W
R697	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R698	1-216-833-11	METAL CHIP	10K	5%	1/16W
R699	1-216-809-11	METAL CHIP	100	5%	1/16W
R700	1-216-813-11	METAL CHIP	220	5%	1/16W
R701	1-216-805-11	METAL CHIP	47	5%	1/16W
R702	1-216-818-11	METAL CHIP	560	5%	1/16W
R703	1-216-805-11	METAL CHIP	47	5%	1/16W
R704	1-216-818-11	METAL CHIP	560	5%	1/16W
R705	1-216-818-11	METAL CHIP	560	5%	1/16W
R706	1-216-809-11	METAL CHIP	100	5%	1/16W
R708	1-216-817-11	METAL CHIP	470	5%	1/16W
R710	1-216-805-11	METAL CHIP	47	5%	1/16W
R711	1-216-817-11	METAL CHIP	470	5%	1/16W
R712	1-216-864-11	METAL CHIP	0	5%	1/16W
R713	1-216-805-11	METAL CHIP	47	5%	1/16W
R715	1-216-864-11	METAL CHIP	0	5%	1/16W
R716	1-216-813-11	METAL CHIP	220	5%	1/16W
R718	1-216-821-11	METAL CHIP	1K	5%	1/16W
R722	1-216-864-11	METAL CHIP	0	5%	1/16W
R724	1-216-864-11	METAL CHIP	0	5%	1/16W
R725	1-216-817-11	METAL CHIP	470	5%	1/16W
R726	1-216-817-11	METAL CHIP	470	5%	1/16W
R727	1-216-864-11	METAL CHIP	0	5%	1/16W
R728	1-216-864-11	METAL CHIP	0	5%	1/16W
R729	1-216-864-11	METAL CHIP	0	5%	1/16W
R730	1-216-821-11	METAL CHIP	1K	5%	1/16W
R731	1-216-813-11	METAL CHIP	220	5%	1/16W
R734	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R735	1-216-813-11	METAL CHIP	220	5%	1/16W
R736	1-216-864-11	METAL CHIP	0	5%	1/16W
R737	1-216-805-11	METAL CHIP	47	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R738	1-216-805-11	METAL CHIP	47	5%	1/16W
R739	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R740	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R741	1-216-864-11	METAL CHIP	0	5%	1/16W
R745	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R746	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R747	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R748	1-216-864-11	METAL CHIP	0	5%	1/16W
R749	1-216-864-11	METAL CHIP	0	5%	1/16W
R750	1-216-805-11	METAL CHIP	47	5%	1/16W
R753	1-216-805-11	METAL CHIP	47	5%	1/16W
R754	1-216-805-11	METAL CHIP	47	5%	1/16W
R755	1-216-809-11	METAL CHIP	100	5%	1/16W
R756	1-216-809-11	METAL CHIP	100	5%	1/16W
R757	1-216-809-11	METAL CHIP	100	5%	1/16W
R758	1-216-813-11	METAL CHIP	220	5%	1/16W
R759	1-216-813-11	METAL CHIP	220	5%	1/16W
R760	1-216-805-11	METAL CHIP	47	5%	1/16W
R761	1-216-805-11	METAL CHIP	47	5%	1/16W
R762	1-216-813-11	METAL CHIP	220	5%	1/16W
R763	1-216-813-11	METAL CHIP	220	5%	1/16W
R764	1-216-813-11	METAL CHIP	220	5%	1/16W
R765	1-216-813-11	METAL CHIP	220	5%	1/16W
R766	1-216-813-11	METAL CHIP	220	5%	1/16W
R767	1-216-813-11	METAL CHIP	220	5%	1/16W
R768	1-216-813-11	METAL CHIP	220	5%	1/16W
R769	1-216-864-11	METAL CHIP	0	5%	1/16W
R770	1-216-813-11	METAL CHIP	220	5%	1/16W
R771	1-216-805-11	METAL CHIP	47	5%	1/16W
R772	1-216-805-11	METAL CHIP	47	5%	1/16W
R773	1-216-805-11	METAL CHIP	47	5%	1/16W
R774	1-216-805-11	METAL CHIP	47	5%	1/16W
R775	1-216-805-11	METAL CHIP	47	5%	1/16W
R776	1-216-805-11	METAL CHIP	47	5%	1/16W
R777	1-216-805-11	METAL CHIP	47	5%	1/16W
R779	1-216-805-11	METAL CHIP	47	5%	1/16W
R780	1-216-805-11	METAL CHIP	47	5%	1/16W
R781	1-216-805-11	METAL CHIP	47	5%	1/16W
R782	1-216-813-11	METAL CHIP	220	5%	1/16W
R783	1-216-805-11	METAL CHIP	47	5%	1/16W
R784	1-216-807-11	METAL CHIP	68	5%	1/16W
R785	1-216-807-11	METAL CHIP	68	5%	1/16W
R786	1-216-807-11	METAL CHIP	68	5%	1/16W
R787	1-216-813-11	METAL CHIP	220	5%	1/16W
R788	1-216-813-11	METAL CHIP	220	5%	1/16W
R791	1-216-813-11	METAL CHIP	220	5%	1/16W
R792	1-216-864-11	METAL CHIP	0	5%	1/16W
R793	1-216-819-11	METAL CHIP	680	5%	1/16W
R816	1-216-864-11	METAL CHIP	0	5%	1/16W
R817	1-216-864-11	METAL CHIP	0	5%	1/16W

AD-32

Ref. No.	Part No.	Description			Remarks
R853	1-216-813-11	METAL CHIP	220	5%	1/16W
R854	1-216-813-11	METAL CHIP	220	5%	1/16W
R855	1-216-813-11	METAL CHIP	220	5%	1/16W
R856	1-216-813-11	METAL CHIP	220	5%	1/16W
R857	1-216-813-11	METAL CHIP	220	5%	1/16W
R858	1-216-813-11	METAL CHIP	220	5%	1/16W
R859	1-216-813-11	METAL CHIP	220	5%	1/16W
R860	1-216-813-11	METAL CHIP	220	5%	1/16W
R861	1-216-813-11	METAL CHIP	220	5%	1/16W
R862	1-216-813-11	METAL CHIP	220	5%	1/16W
R863	1-216-813-11	METAL CHIP	220	5%	1/16W
R864	1-216-813-11	METAL CHIP	220	5%	1/16W
R865	1-216-813-11	METAL CHIP	220	5%	1/16W
R866	1-216-813-11	METAL CHIP	220	5%	1/16W
R867	1-216-813-11	METAL CHIP	220	5%	1/16W
R868	1-216-813-11	METAL CHIP	220	5%	1/16W
R869	1-216-813-11	METAL CHIP	220	5%	1/16W
R870	1-216-813-11	METAL CHIP	220	5%	1/16W
R871	1-216-813-11	METAL CHIP	220	5%	1/16W
R872	1-216-813-11	METAL CHIP	220	5%	1/16W
R873	1-216-813-11	METAL CHIP	220	5%	1/16W
R874	1-216-813-11	METAL CHIP	220	5%	1/16W
R875	1-216-813-11	METAL CHIP	220	5%	1/16W
R876	1-216-813-11	METAL CHIP	220	5%	1/16W
R877	1-216-813-11	METAL CHIP	220	5%	1/16W
R878	1-216-813-11	METAL CHIP	220	5%	1/16W
R901	1-216-813-11	METAL CHIP	220	5%	1/16W
R902	1-216-813-11	METAL CHIP	220	5%	1/16W
R903	1-216-813-11	METAL CHIP	220	5%	1/16W
R904	1-216-813-11	METAL CHIP	220	5%	1/16W
R905	1-216-813-11	METAL CHIP	220	5%	1/16W
R906	1-216-811-11	METAL CHIP	150	5%	1/16W
R907	1-216-821-11	METAL CHIP	1K	5%	1/16W
R909	1-216-841-11	METAL CHIP	47K	5%	1/16W
R910	1-216-815-11	METAL CHIP	330	5%	1/16W
R912	1-216-833-11	METAL CHIP	10K	5%	1/16W
R914	1-216-845-11	METAL CHIP	100K	5%	1/16W
R919	1-216-817-11	METAL CHIP	470	5%	1/16W
R922	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R924	1-216-821-11	METAL CHIP	1K	5%	1/16W
R927	1-216-841-11	METAL CHIP	47K	5%	1/16W
R928	1-216-813-11	METAL CHIP	220	5%	1/16W
R930	1-216-809-11	METAL CHIP	100	5%	1/16W
R932	1-216-845-11	METAL CHIP	100K	5%	1/16W
R933	1-216-821-11	METAL CHIP	1K	5%	1/16W
R934	1-216-817-11	METAL CHIP	470	5%	1/16W
R935	1-216-809-11	METAL CHIP	100	5%	1/16W
R936	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R937	1-216-864-11	METAL CHIP	0	5%	1/16W
R948	1-216-841-11	METAL CHIP	47K	5%	1/16W
R956	1-216-818-11	METAL CHIP	560	5%	1/16W

Ref. No.	Part No.	Description	Remarks
		< CONPOSITION CIRCUIT BLOCK >	
RB401	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB402	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB501	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB600	1-239-412-11	NETWORK RESISTOR (CHIP) 100	
RB601	1-239-412-11	NETWORK RESISTOR (CHIP) 100	
RB602	1-239-412-11	NETWORK RESISTOR (CHIP) 100	
RB603	1-236-420-11	NETWORK, RES 4.7K	
RB604	1-239-412-11	NETWORK RESISTOR (CHIP) 100	
RB605	1-236-420-11	NETWORK, RES 4.7K	
RB606	1-239-412-11	NETWORK RESISTOR (CHIP) 100	
RB607	1-236-420-11	NETWORK, RES 4.7K	
RB608	1-239-412-11	NETWORK RESISTOR (CHIP) 100	
RB609	1-239-430-11	NETWORK RESISTOR (CHIP) 4.7K	
RB610	1-239-389-11	NWTWORK RESISTOR (CHIP) 47K	
RB611	1-239-389-11	NWTWORK RESISTOR (CHIP) 47K	
RB612	1-239-711-11	NETWORK RESISTOR (CHIP) 0	
RB613	1-239-711-11	NETWORK RESISTOR (CHIP) 0	
RB614	1-239-711-11	NETWORK RESISTOR (CHIP) 0	
RB615	1-239-711-11	NETWORK RESISTOR (CHIP) 0	
RB616	1-239-711-11	NETWORK RESISTOR (CHIP) 0	
RB617	1-239-711-11	NETWORK RESISTOR (CHIP) 0	
RB618	1-236-420-11	NETWORK, RES 4.7K	
RB619	1-236-432-11	NETWORK, RES 47K	
RB620	1-236-432-11	NETWORK, RES 47K	
RB650	1-239-389-11	NWTWORK RESISTOR (CHIP) 47K	
RB651	1-239-389-11	NWTWORK RESISTOR (CHIP) 47K	
RB701	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB702	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB703	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB704	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB705	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB706	1-236-404-11	NETWORK, RES 220	
RB707	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB708	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB710	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB711	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB712	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB713	1-236-404-11	NETWORK, RES 220	
RB714	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB715	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB716	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB717	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB718	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB719	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB720	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB721	1-236-404-11	NETWORK, RES 220	
RB802	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB803	1-239-416-11	NETWORK RESISTOR (CHIP) 220	
RB900	1-236-904-11	NETWORK RESISTOR (CHIP) 1.0K	
RB901	1-236-412-11	NETWORK, RES 1.0K	

Ref. No.	Part No.	Description	Remarks
RB902	1-236-908-11	NETWORK RESISTOR (CHIP) 10K	
RB903	1-239-389-11	NWTWORK RESISTOR (CHIP) 47K	
RB904	1-236-424-11	NETWORK, RES 10K	
RB905	1-239-389-11	NWTWORK RESISTOR (CHIP) 47K	
RB906	1-239-389-11	NWTWORK RESISTOR (CHIP) 47K	
RB907	1-236-432-11	NETWORK, RES 47K	
RB908	1-236-404-11	NETWORK, RES 220	
RB909	1-236-404-11	NETWORK, RES 220	
RB910	1-236-424-11	NETWORK, RES 10K	
RB911	1-236-904-11	NETWORK RESISTOR (CHIP) 1.0K	
RB912	1-236-404-11	NETWORK, RES 220	
RB913	1-236-904-11	NETWORK RESISTOR (CHIP) 1.0K	
RB914	1-236-904-11	NETWORK RESISTOR (CHIP) 1.0K	
RB915	1-236-904-11	NETWORK RESISTOR (CHIP) 1.0K	
		< VIBRATOR >	
X200	1-579-738-21	VIBRATOR, CRYSTAL 14.3MHz	
X501	1-577-349-11	VIBRATOR, CRYSTAL 16MHz	
X502	1-579-907-21	VIBRATOR, CERAMIC 20MHz	
X700	1-579-868-11	VIBRATOR, CRYSTAL 20MHz	
XTL900	1-579-369-21	VIBRATOR 10MHz	
*	A-7066-328-A	CA-54 BOARD, COMPLETE	
		**********	
		(Ref.No.: 3,000 Series)	
		< CONNECTOR >	
* CN113	1-580-055-21	PIN, CONNECTOR 2P	
		< SWITCH >	
S107	1-570-407-11	SWITCH, SLIDE (RIBBON CARTRIDGE)	
*	A-7066-327-A	CO-24 BOARD, COMPLETE	
		**********	
		(Ref.No.: 3,000 Series)	
		< CONNECTOR >	
CN301	1-580-057-11	PIN, CONNECTOR 4P	
		< PHOTO INTERRUPTER >	
PH109	8-749-923-97	PHOTO INTERRUPTER GP2S40K	
		< SWITCH >	
S109	1-571-958-11	SWITCH, PUSH (1 KEY) (RIBBON DOOR)	

Ref. No.	Part No.	Description	Remarks
*	A-7066-333-A	HM-25 BOARD, COMPLETE	
		**********	
		(Ref.No.: 3,000 Series)	
		< CONNECTOR >	
CN116	1-580-057-11	PIN, CONNECTOR 4P	
* CN202	1-580-055-21	PIN, CONNECTOR 2P	
*	A-7066-330-A	HP-90 BOARD, COMPLETE	
		**********	
		(Ref.No.: 3,000 Series)	
		< CONNECTOR >	
CN108	1-580-789-21	PIN, CONNECTOR (SMD) 6P	
CN201	1-580-057-11	PIN, CONNECTOR 4P	
		< PHOTO INTERRUPTER >	
PH101	8-749-923-97	PHOTO INTERRUPTER GP2S40K	
*	A-7066-335-A	JD-1 BOARD, COMPLETE	
		**********	
		(Ref.No.: 3,000 Series)	
		< CONNECTOR >	
CN112	1-691-550-11	PIN, CONNECTOR (1.5MM)(SMD) 3P	
		< PHOTO INTERRUPTER >	
PH106	8-749-923-97	PHOTO INTERRUPTER GP2S40K	
*	A-7066-567-A	KY-30 BOARD, COMPLETE	
		**********	
		(Ref.No.: 4,000 Series)	
		< CONNECTOR >	
CN002	1-764-007-11	PIN, CONNECTOR (SMD) 12P	
		< DIODE >	
D301	8-719-987-43	DIODE CL-150PG-CD	
		< JUMPER RESISTOR >	
JR301	1-216-296-00	CONDUCTOR, CHIP (3216)	
JR302	1-216-296-00	CONDUCTOR, CHIP (3216)	
JR303	1-216-295-00	CONDUCTOR, CHIP (2012)	

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R301	1-216-031-00	METAL CHIP	180	5% 1/10W	
R302	1-216-071-00	METAL CHIP	8.2K	5% 1/10W	
R303	1-216-063-00	METAL GLAZE	3.9K	5% 1/10W	
R304	1-216-055-00	METAL CHIP	1.8K	5% 1/10W	
R307	1-216-063-00	METAL GLAZE	3.9K	5% 1/10W	
R308	1-216-055-00	METAL CHIP	1.8K	5% 1/10W	
		< SWITCH >			
S301	1-572-921-11	SWITCH, KEY BOARD (UPPER)			
S302	1-572-921-11	SWITCH, KEY BOARD (STANDARD)			
S303	1-572-921-11	SWITCH, KEY BOARD (SOURCE)			
S304	1-572-921-11	SWITCH, KEY BOARD (MEMORY RECALL)			
S306	1-572-921-11	SWITCH, KEY BOARD (PRINT)			
S307	1-572-921-11	SWITCH, KEY BOARD (FIELD/FRAME)			
S308	1-572-921-11	SWITCH, KEY BOARD (LOWER)			
*	A-7066-568-A	KY-31 BOARD, COMPLETE			
		**********			
		(Ref.No.: 2,000 Series)			
		< CONNECTOR >			
CN0005	1-569-775-11	PIN, CONNECTOR (SMD) 5P			
		< RESISTOR >			
R400	1-216-067-00	METAL CHIP	5.6K	5% 1/10W	
R403	1-216-055-00	METAL CHIP	1.8K	5% 1/10W	
R405	1-216-055-00	METAL CHIP	1.8K	5% 1/10W	
R406	1-216-067-00	METAL CHIP	5.6K	5% 1/10W	
R407	1-216-071-00	METAL CHIP	8.2K	5% 1/10W	
R408	1-216-063-00	METAL GLAZE	3.9K	5% 1/10W	
R410	1-216-079-00	METAL CHIP	18K	5% 1/10W	
R411	1-216-071-00	METAL CHIP	8.2K	5% 1/10W	
R412	1-216-055-00	METAL CHIP	1.8K	5% 1/10W	
R413	1-216-067-00	METAL CHIP	5.6K	5% 1/10W	
R414	1-216-091-00	METAL CHIP	56K	5% 1/10W	
R415	1-216-079-00	METAL CHIP	18K	5% 1/10W	
		< SWITCH >			
S401	1-572-921-11	SWITCH, KEY BOARD (DISPLAY)			
S403	1-572-921-11	SWITCH, KEY BOARD (TEMPLATE)			
S405	1-572-921-11	SWITCH, KEY BOARD (NEXT)			
S407	1-572-921-11	SWITCH, KEY BOARD (EXEC)			
S408	1-572-921-11	SWITCH, KEY BOARD (PRINT QTY)			
S409	1-572-921-11	SWITCH, KEY BOARD (SPLIT MODE)			
S410	1-572-921-11	SWITCH, KEY BOARD (PRINT CANCEL)			
S411	1-572-921-11	SWITCH, KEY BOARD (POSITION)			
S412	1-571-506-41	SWITCH, SLIDE (SHARP)			
S413	1-571-506-41	SWITCH, SLIDE (BRIGHT)			

Ref. No.	Part No.	Description			Remarks
*	A-7066-566-A	LD-79 BOARD, COMPLETE			
		**********			
		(Ref.No.: 2,000 Series)			
		< CONNECTOR >			
* CN008	1-580-055-21	PIN, CONNECTOR 2P			
		< DIODE >			
D101	8-719-987-43	DIODE CL-150PG-CD			
D102	8-719-987-43	DIODE CL-150PG-CD			
		< RESISTOR >			
R101	1-216-031-00	METAL CHIP	180	5% 1/10W	
R102	1-216-031-00	METAL CHIP	180	5% 1/10W	
*	A-7066-326-A	MK-12 BOARD, COMPLETE			
		**********			
		(Ref.No.: 3,000 Series)			
	1-655-501-11	FP-10 FLEXIBLE BOARD			
		< JUMPER RESISTOR >			
JR101	1-216-296-00	CONDUCTOR, CHIP (3216)			
		< PHOTO INTERRUPTER >			
PH104	8-749-923-97	PHOTO INTERRUPTER GP2S40K			
PH105	8-749-923-97	PHOTO INTERRUPTER GP2S40K			
*	A-7066-334-A	PE-18 BOARD, COMPLETE			
		**********			
		(Ref.No.: 3,000 Series)			
		< CONNECTOR >			
* CN110	1-580-056-21	PIN, CONNECTOR 3P			
		< PHOTO INTERRUPTER >			
PH103	8-749-923-97	PHOTO INTERRUPTER GP2S40K			

Ref. No.	Part No.	Description	Remarks
*	A-7066-329-A	PJ-74 BOARD, COMPLETE	
		**********	
		(Ref.No.: 3,000 Series)	
		< CONNECTOR >	
* CN120	1-580-056-21	PIN, CONNECTOR 3P	
		< PHOTO INTERRUPTER >	
PH110	8-719-991-24	DIODE GP1S23	
*	A-7066-331-A	PP-14 BOARD, COMPLETE	
		**********	
		(Ref.No.: 3,000 Series)	
*	3-949-924-01	HOLDER, P SENSOR	
		< CONNECTOR >	
* CN109	1-580-056-21	PIN, CONNECTOR 3P	
		< PHOTO INTERRUPTER >	
PH102	8-749-923-97	PHOTO INTERRUPTER GP2S40K	
*	A-7066-332-A	RM-72 BOARD, COMPLETE	
		**********	
		(Ref.No.: 3,000 Series)	
		< CONNECTOR >	
* CN117	1-580-055-21	PIN, CONNECTOR 2P	
*	A-7066-339-A	TR-74 BOARD, COMPLETE	
		**********	
		(Ref.No.: 3,000 Series)	
		< SWITCH >	
S108	1-570-407-11	SWITCH, SLIDE (TRAY)	
*	1-656-730-11	TS-147 BOARD	
		**********	
		(Ref.No.: 3,000 Series)	
		< DIODE >	
D200	8-719-820-46	LED TLN107A	

Ref. No.	Part No.	Description	Remarks
*	1-656-731-11	TS-148 BOARD	
		**********	
		(Ref.No.: 3,000 Series)	
		< CONNECTOR >	
* CN400	1-580-056-21	PIN, CONNECTOR 3P	
* CN401	1-580-055-21	PIN, CONNECTOR 2P	
		< TRANSISTOR >	
Q200	8-729-822-57	TRANSISTOR TPS607A	
*	A-7066-565-A	VR-56 BOARD, COMPLETE	
		**********	
		(Ref.No.: 2,000 Series)	
		< BUZZER >	
BZ201	1-529-080-11	BUZZER, PIEZOELECTRIC	
		< CAPACITOR >	
C201	1-110-569-11	TANTAL. CHIP 47uF 20% 6.3V	
		< CONNECTOR >	
CN006	1-580-789-21	PIN, CONNECTOR (SMD) 6P	
* CN007	1-580-055-21	PIN, CONNECTOR 2P	
		< DIODE >	
D201	8-719-977-95	DIODE DTZ-TT11-2.4B	
		< IC >	
IC201	8-748-010-08	IC RAY CATCHER ELEMENT SBX8010-H	
		< RESISTOR >	
R201	1-216-041-00	METAL CHIP 470 5% 1/10W	
R202	1-216-033-00	METAL CHIP 220 5% 1/10W	
		< VARIABLE RESISTOR >	
RV201	1-223-858-11	RES, VAR, CARBON 10K (HUE)	
RV202	1-223-858-11	RES, VAR, CARBON 10K (COLOR)	
⚠	1-468-008-21	POWER BLOCK (SWITCHING REGULATOR)	
		**********	
		(Ref.No.:5,000 Series)	
	1-413-933-12	HEAT SINK	
	1-413-933-21	HEAT SINK	
⚠	1-526-985-11	AC INLET	
	9-933-894-01	HOLDER, FUSE	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

POWER BLOCK

Ref. No.	Part No.	Description		Remarks
		< CAPACITOR >		
⚠C101	9-933-883-01	METAL	0.1uF	250V
⚠C102	9-933-883-01	METAL	0.1uF	250V
⚠C103	1-167-742-00	CERAMIC	2200PF	400V
⚠C104	1-167-742-00	CERAMIC	2200PF	400V
⚠C105	1-167-742-00	CERAMIC	2200PF	400V
C106	1-124-903-11	ELECT	1uF	50V
C107	1-163-189-00	CERAMIC CHIP	220PF	50V
C108	1-163-077-00	CERAMIC CHIP	0.1uF	50V
C109	1-163-199-00	CERAMIC CHIP	560PF	50V
C111	1-163-035-00	CERAMIC CHIP	0.047uF	50V
C112	9-900-525-01	METAL	0.047uF	400V
C114	9-909-673-01	CERAMIC	220PF	1KV
C115	1-126-967-51	ELECT	47uF	50V
C116	9-933-884-01	ELECT	330uF	200V
C201	1-126-146-11	ELECT	1000uF	35V
C202	1-126-942-61	ELECT	1000uF	25V
C204	1-124-463-00	ELECT	0.1uF	50V
C205	1-126-146-11	ELECT	1000uF	35V
C206	1-124-760-11	ELECT	2200uF	10V
C208	1-126-926-11	ELECT	1000uF	10V
C209	1-126-933-11	ELECT	100uF	10V
C210	1-130-495-00	FILM	0.1uF	50V
C211	1-124-463-00	ELECT	0.1uF	50V
C212	1-130-491-00	FILM	0.047uF	50V
C213	1-130-483-00	FILM	0.01uF	50V
C216	9-904-817-01	CERAMIC	1000PF	1KV
C217	1-124-463-00	ELECT	0.1uF	50V
		< CONNECTOR >		
CN001	1-506-491-11	CONNECTOR 12P		
CN002	1-566-528-11	CONNECTOR 12P		
		< DIODE >		
⚠D101	8-719-500-58	DIODE	D3SBA60	
D102	9-902-050-01	DIODE	ERA15-06	
D103	8-719-052-58	DIODE	AG01A	
D105	8-719-036-28	DIODE	MA4220	
D106	9-900-514-01	DIODE	MA165	
D107	8-719-036-28	DIODE	MA4220	
D108	9-900-535-01	DIODE	AU02Z	
D201	9-933-888-01	DIODE	SF10LC20U	
D202	9-933-889-01	DIODE	SF10SC4	
D203	8-719-043-74	DIODE	AK04	
D204	8-719-043-74	DIODE	AK04	
D205	8-719-116-92	DIODE	MA4270	
D206	8-719-116-21	DIODE	MA4120	
D207	8-719-981-00	DIODE	ERC81-004	

Ref. No.	Part No.	Description		Remarks
		< FUSE >		
⚠F101	1-532-439-11	FUSE 4A	125V	
		< IC >		
IC101	8-759-062-58	IC	FA5311	
IC201	8-759-420-19	IC	AN1431T	
IC202	8-759-246-78	IC	PQ05RF14	
IC203	8-759-937-59	IC	MB3759	
		< COIL >		
⚠L101	9-904-901-01	LINE FILTER		
⚠L102	9-904-901-01	LINE FILTER		
L103	9-904-796-01	BEAD CORE		
L104	9-933-885-01	BEAD CORE		
L201	9-904-807-01	CHOKE COIL	10uH	
L203	9-933-891-01	CHOKE COIL	10uH	
L204	9-904-807-01	CHOKE COIL	10uH	
L205	9-904-796-01	BEAD CORE		
L206	9-904-796-01	BEAD CORE		
		< PHOTOCOUPLER >		
PC101	8-719-018-29	PHOTOCOUPLER	ON3131	
		< TRANSISTOR >		
Q101	9-933-879-01	TRANSISTOR	2SK2188	
Q201	9-902-760-01	TRANSISTOR	2SB1434	
Q202	8-729-422-72	TRANSISTOR	UN4211	
Q203	9-933-890-01	TRANSISTOR	2SC3568	
Q204	8-729-993-42	TRANSISTOR	2SA934	
Q205	8-729-029-48	TRANSISTOR	DTA143T	
		< RESISTOR >		
R101	9-904-783-01	THERMISTOR	5	
R102	9-933-880-01	FILM	33K	1W
R103	9-933-880-01	FILM	33K	1W
R104	9-933-881-01	CARBON	0.22	1W
R105	9-933-881-01	CARBON	0.22	1W
R106	1-216-180-00	METAL CHIP	180	1/8W
R107	1-216-216-00	METAL CHIP	5.6K	1/8W
R108	1-216-206-00	METAL CHIP	2.2K	1/8W
R109	9-933-882-01	FILM	22	1W
R110	1-215-901-00	FILM	33K	2W
R111	1-247-855-31	CARBON	10K	1/4W
R112	1-216-174-00	METAL CHIP	100	1/8W
R113	1-212-966-00	CARBON	22	1/2W
R114	1-216-178-11	METAL CHIP	150	1/8W
R115	1-212-982-11	CARBON	100	1/2W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description		Remarks
R117	1-249-395-11	CARBON	15	1/4W
R201	1-249-417-11	CARBON	1K	1/4W
R202	1-247-855-31	CARBON	10K	1/4W
R203	1-249-420-11	CARBON	1.8K	1/4W
R204	1-247-807-31	CARBON	100	1/4W
R205	1-249-417-11	CARBON	1K	1/4W
R206	9-933-892-01	FILM	560	1W
R207	9-933-892-01	FILM	560	1W
R208	1-249-417-11	CARBON	1K	1/4W
R209	1-247-807-31	CARBON	100	1/4W
R210	1-247-881-00	CARBON	120K	1/4W
R211	1-247-855-31	CARBON	10K	1/4W
R212	1-247-855-31	CARBON	10K	1/4W
R213	1-249-427-11	CARBON	6.8K	1/4W
R214	1-247-855-31	CARBON	10K	1/4W
R215	1-247-839-31	CARBON	2.2K	1/4W
R216	9-933-892-01	FILM	560	1W
R217	1-249-403-11	CARBON	68	1/4W
R219	1-249-387-11	CARBON	3.3	1/4W
R221	1-249-403-11	CARBON	68	1/4W
R222	1-249-404-11	CARBON	82	1/4W
R224	1-249-427-11	CARBON	6.8K	1/4W
R225	1-249-422-11	CARBON	2.7K	1/4W
R226	1-247-839-31	CARBON	2.2K	1/4W
R227	1-247-881-00	CARBON	120K	1/4W
R229	1-249-417-11	CARBON	1K	1/4W
R230	1-249-427-11	CARBON	6.8K	1/4W

< THYRISTOR >

SCR201	9-902-500-11	THYRISTOR	2P4M

< SWITCH >

⚠SW101	9-933-887-01	SWITCH (POWER)

< TRANSFORMER >

⚠T101	9-933-886-01	TRANSFORMER

< VARIABLE RESISTOR >

VR201	9-933-893-01	VARIABLE RESISTOR, CARBON	5K	1/10W
VR202	1-238-570-11	VARIABLE RESISTOR, CARBON	2K	1/10W

Ref. No.	Part No.	Description	Remarks
		MISCELLANEOUS	
		**********	
301	1-500-207-11	HEAD, THERMAL	
302	1-769-140-11	CABLE, FLAT (FFC) (FFC-145) 12P	
303	1-769-139-11	CABLE, FLAT (FFC) (FFC-144) 10P	
M901	1-698-534-11	MOTOR, DC (FAN)	
M902	1-698-534-11	MOTOR, DC (FAN)	
M903	X-3945-227-1	MOTOR ASSY, STEPPING	

ACCESSORIES & PACKING MATERIALS
****

⚠	1-590-135-31	CORD, POWER
	1-696-863-21	CORD, CONNECTION (VIDEO CABLE) 3m
*	3-704-295-01	BAG (STANDARD), PROTECTION
	3-798-234-21	MANUAL, INSTRUCTION (ENGLISH)
*	3-962-737-11	INDIVIDUAL CARTON
*	3-962-738-01	CUSHION (UPPER)
*	3-962-739-01	CUSHION (LOWER)
*	3-965-403-01	SHEET, PROTECTION

****
HARDWARE LIST
****

#1	7-685-651-79	SCREW +BVTP 3X20 TYPE2
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3
#4	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3
#6	7-621-770-67	SCREW +BVTT 2.6X6 (S)
#7	7-682-645-01	SCREW +PS 3X4
#8	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT
#9	7-621-775-80	SCREW +PTT 2.6X16 (S)
#10	7-628-253-90	SCREW +PS 2.6X4
#11	7-621-759-65	+PSW, 2.6X8
#12	7-624-102-04	STOP RING 1.5, TYPE -E
#13	7-626-314-51	SPRING PIN 2X20

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

6-1. Y/C SEPARATION (AD-32 board IC102 CXD2023Q)

Pin No.	Signal	I/O	Function
1	V18	I	Digital input. (MSB) Connected to DVss or DVDD when not used
2	V17	I	Digital input. Connected to DVss or DVDD when not used
3	V16	I	Digital input. Connected to DVss or DVDD when not used
4	V15	I	Digital input. Connected to DVss or DVDD when not used
5	V14	I	Digital input. Connected to DVss or DVDD when not used
6	V13	I	Digital input. Connected to DVss or DVDD when not used
7	V12	I	Digital input. Connected to DVss or DVDD when not used
8	V11	I	Digital input. Connected to DVss or DVDD when not used
9	ADCO	I	H: The video signal input from A/D converter (input pin ADIN) is output to the Y output pin (YA to Y3) in the form of 8-bit digital data with 3.5 clock delay. L: Normal mode
10	INSL	I	Input select. Input to comb filter is selected H: Digital input L: Analog input
11	OCLK	I	Clock amplifier input. It is 0.8 Vp-p or more. Use a capacitor to cut DC signal
12	DVss		Digital GND
13	DVDD		Digital power supply (5V)
14	CLKO	O	Clock amplifier output
15	MCK	I	Clock input. 4fsc clock which locked to color burst must be input. The clock amplifier output of pin-14 is connected here normally
16	ADCK	I	The same clock as the clock input MCK for A/D converter must be input. The clock amplifier output of pin-14 is connected here normally
17	CLPI	I	The clamp pulse input for A/D converter. This clamp pulse input clamps the LOW duration of the signal voltage. When clamp function is turned OFF, connect this pin to DVDD.
18	XCPON	I	H: The clamp function is turned OFF. Normal A/D converter function works. L: Clamp function works
19	ADVS	—	Digital GND for A/D converter
20	ICP	I	External capacitor which integrates the clamp control voltage is connected to this pin. Connect a capacitor of about 0.01μF. (If clamp is not used, connect this pin to GND.)
21	CRV	I	Clamp reference voltage input. It works in such a manner that the reference voltage and the input voltage during the clamp period becomes equal. (If clamp is not used, connect this pin to GND.)
22	RB	O	Reference voltage (Bottom). Reference value (0.5V)
23	GR	—	Guard ring (Connect this pin to analog GND.)
24	AAVS	—	Analog GND for A/D converter
25	ADIN	I	Comb filter analog input (A/D converter input)
26	AAVD	—	Analog power supply (5V) for A/D converter
27	RT	O	Reference voltage (Top). Reference value (0.5V)
28	ADVD	—	Digital power supply (5V) for A/D converter
29	YVDD	—	Power supply (5V) for Y-D/A converter
30	XAYO	O	AYO inverted current output pin (Connect this pin to analog ground YVss)
31	AYO	O	Analog luminance signal output (Connect this pin to analog GND YVss)
32	YVG	O	Connect an external capacitor of about 0.1μF
33	YVRF	I	This input sets the full scale value of the analog luminance signal
34	YIRF	O	Connect an resistor "16R" whose value is 16 times of the output resistor "R" at the AYO pin
35	YVss	—	Analog GND for Y-D/A converter
36	VB	O	Connect an external capacitor of about 0.1μF
37	CVDD	—	Analog power supply (5V) for C-D/A converter
38	XACO	I	ACO inverted current output pin (Connect this pin to analog ground CVss)
39	ACO	O	Analog chroma signal output. (Output can be taken out by connecting a resistor)
40	CVG	O	Connect an external capacitor of about 0.1μF
41	CVRF	I	This input sets the full scale value of the analog chroma signal

Pin No.	Signal	I/O	Function
42	CIRF	O	Connect an resistor "16R" whose value is 16 times of the output resistor "R" at the ACO pin
43	CVss	—	GND for C-D/A converter
44	YA	O	Digital luminance signal output (NSR)
45	Y9	O	Digital luminance signal output
46	Y8	O	Digital luminance signal output
47	Y7	O	Digital luminance signal output
48	Y6	O	Digital luminance signal output
49	Y5	O	Digital luminance signal output
50	Y4	O	Digital luminance signal output
51	Y3	O	Digital luminance signal output
52	DVss	—	Digital GND
53	DVDD	—	Digital power supply (5V)
54	Y2	O	Digital luminance signal output
55	Y1	O	Digital luminance signal output (LSB)
56	XYOE	I	Digital luminance signal output control H: High impedance L: Enable
57	CA	O	Digital chroma signal output (MSB)
58	C9	O	Digital chroma signal output
59	C8	O	Digital chroma signal output
60	C7	O	Digital chroma signal output
61	C6	O	Digital chroma signal output
62	C5	O	Digital chroma signal output
63	C4	O	Digital chroma signal output
64	C3	O	Digital chroma signal output
65	C2	O	Digital chroma signal output
66	C1	O	Digital chroma signal output
67	XCOE	I	Digital chroma signal output control H: High impedance L: Enable
68	APCN	I	Aperture correction H: Deterioration of frequency response due to aperture is corrected. The aperture correction is applied to the Y output even in through mode (TST ON) L: Standard mode
69	TEST	I	TEST pin. Fixed to "L"
70	TEST	I	TEST pin. Fixed to "L"
71	TST	I	Y output through mode H: The input composite video signal is output from the Y output. This output has delay of 1H + 18 clocks after input. (In digital input mode). The C signal which is separated by Y/C separation is output to the C output. L: Y/C separation mode
72	DVss	—	Digital GND
73	DVDD	—	Digital power supply (5V)
74	TEST	I	TEST pin. Fixed to "L"
75	TEST	I	TEST pin. Fixed to "L"
76	TEST	I	TEST pin. Fixed to "L"
77	TEST	I	TEST pin. Fixed to "L"
78	TEST	I	TEST pin. Fixed to "L"
79	BPF	I	H: Fixed to BPF separation L: Standard mode
80	TEST	I	TEST pin. Fixed to "L"

SECTION 7
ELECTRICAL ADJUSTMENT

7-1. MECHANICAL ADJUSTMENT

1. Thermal Head Replacement

1) Before replacing the thermal head, use the old (defective) thermal head and print the stair step pattern.

Note 1: The head trouble contents must be limited to black streaking or white streaking so that the entire system must not be damaged.

Note 2: Refer to "Downloading Test Pattern to Memory" (page 7-6) of section "2-1-4. Service Mode Operation" for details to use the test patterns.

2) Remove the upper cabinet assembly. (Refer to section 2-1. "Removal".)

3) Remove the harness ② from the five claws of the head harness clamper ①.

4) Remove the two claws and remove the head harness clamper ① in the direction of arrow. (Fig. A)

5) Remove a screw (P2.6×3) and remove the ribbon guide ③ in the direction of arrow. (Fig. C)

6) Remove the two screws (PSW 2.6×8) and remove the thermal head ④ from the heat sink ⑤. (Fig. D)

Note: Do not remove the two screws (black) ⑥ securing the thermal head and head arm.

7) Remove the connector and replace the thermal head a replacement thermal head.

Note: Take care that the silicon grease (white) must not be attached on the printing surface of the thermal head.
If it touches, wipe off using alcohol.

8) Assemble the thermal head by reversing the steps of disassembly from step 6) to step 2).

9) Perform "Head Voltage Adjustment" of section "2-2. Power Supply Adjustment".

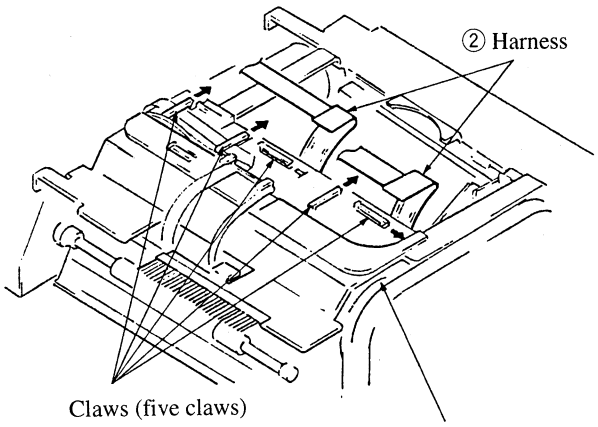


Fig. A

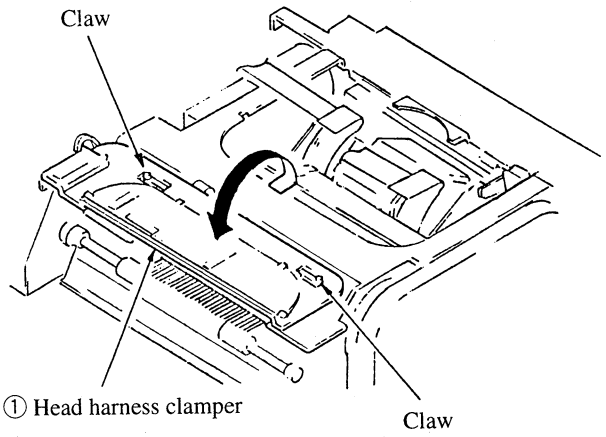


Fig. B

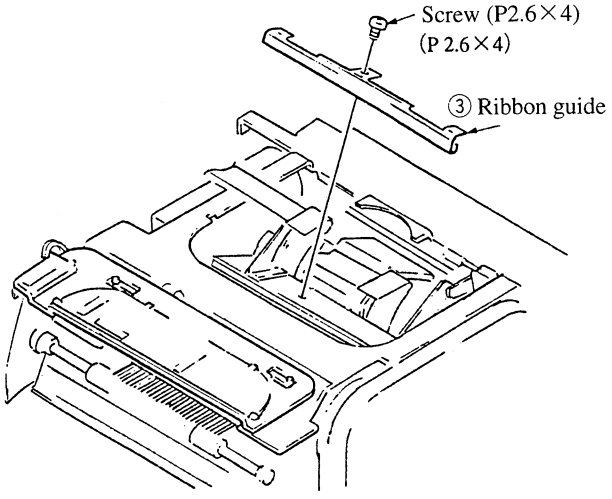


Fig. C

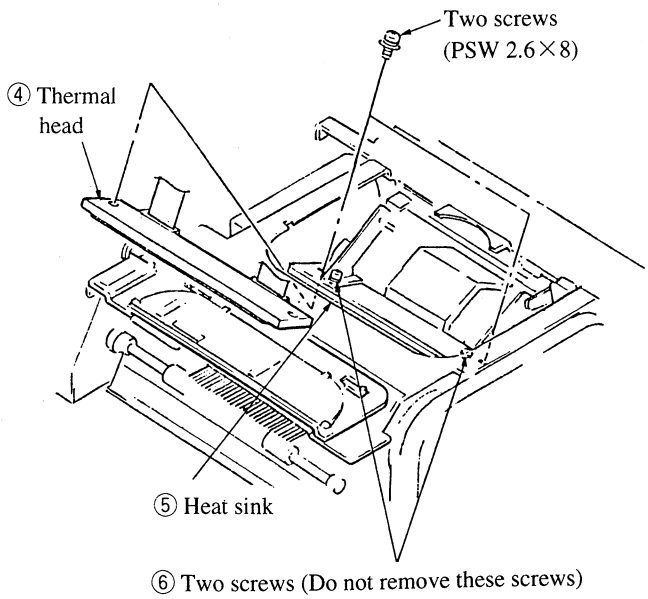


Fig. D

7-2. ELECTRICAL ADJUSTMENT

When performing adjustments, refer to the layout diagrams for adjustment related parts on page 7-20.

2-1. PREPARATIONS BEFORE ADJUSTMENT

The following measuring equipment are used.

2-1-1. Equipment Required

1) Monitor TV
2) Oscilloscope, dual trace, 30 MHz bandwidth or more with delay mode function
   (Use 10:1 probe unless otherwise specified.)
3) Frequency counter
4) Pattern generator with VIDEO output
5) Digital voltmeter
6) Regulated power supply
7) Video print paper
8) Video print cartridge

2-1-2. Equipment Connection

Connect the measuring equipment as shown according to the specified input pin. The input pin is specified in the parenthesis ( ) in the signal column of each adjustment item. If nothing is specified, any input pin can be used. The S VIDEO input pin has priority. When making adjustment using the video input pin, remove the input signal connector from the S VIDEO pin.

Note: If the VIDEO input is used for adjustments which specify the S VIDEO input, some specifications of the machine may not be satisfied. Be sure to use the specified video input signal.

When adjustments are performed using the S VIDEO signal which is output from another VTR as the input signal of this machine, performance of the machine can be affected by the performance of the VTR connected. So a pattern generator with a Y/C output signal is recommended.

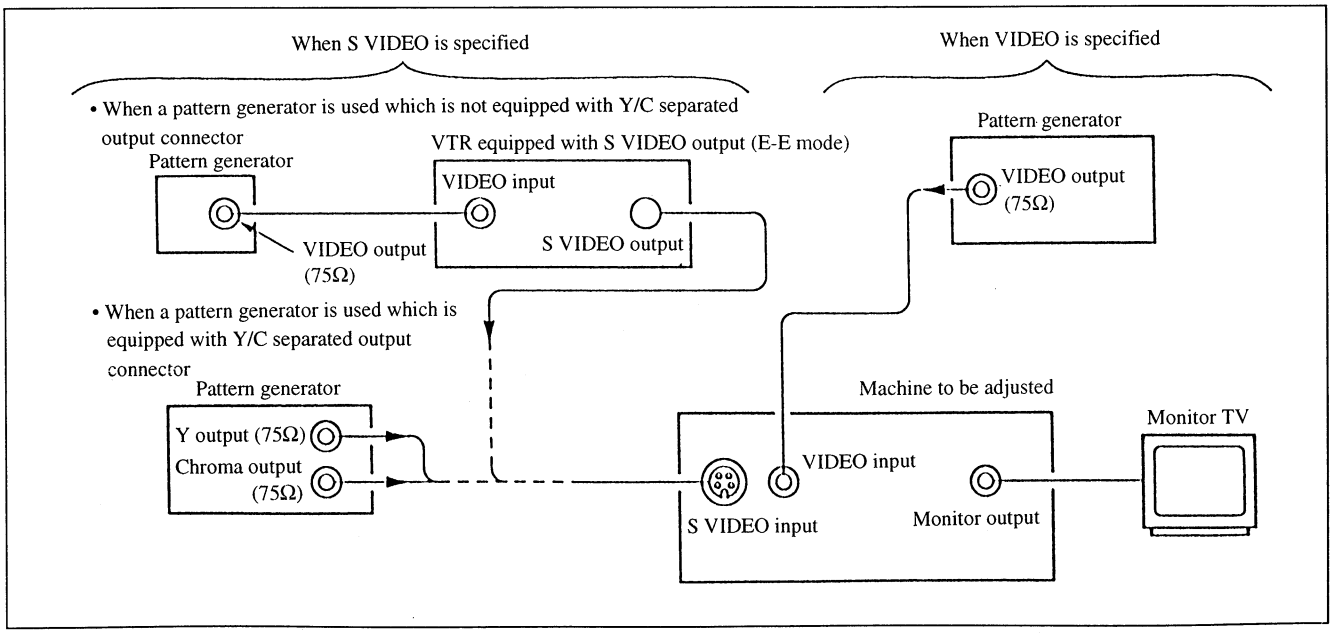

When S VIDEO is specified
When VIDEO is specified
• When a pattern generator is used which is not equipped with Y/C separated output connector
Pattern generator
VTR equipped with S VIDEO output (E-E mode)
VIDEO input
VIDEO output (75Ω)
S VIDEO output
Pattern generator
VIDEO output (75Ω)
• When a pattern generator is used which is equipped with Y/C separated output connector
Pattern generator
Y output (75Ω)
Chroma output (75Ω)
Machine to be adjusted
Monitor TV
VIDEO input
S VIDEO input
Monitor output

Fig. 7-1

2-1-3. Checking the Input Signal

Because the video signal supplied from the pattern generator is used as the adjustment signal, the video output must satisfy the required specification.

1. S VIDEO Input Signal

Connect an oscilloscope to the Y signal connector of the S VIDEO input/output connector. Check that the sync signal has 286 mV and the video signal has 714 mV with setup level of 0 mV. (If a VTR with S VIDEO output is used, check that the chroma and burst signals do not exist.) Connect an oscilloscope to the chroma signal connector of the S VIDEO IN connector and check that the burst signal has 286 mV with flat envelope. Confirm that ratio of burst signal versus chroma signal is 0.30 : 0.66. The Y and chroma signals used in the adjustment are shown in Fig. 7-2.

* Setup level: Voltage difference between black and pedestal.

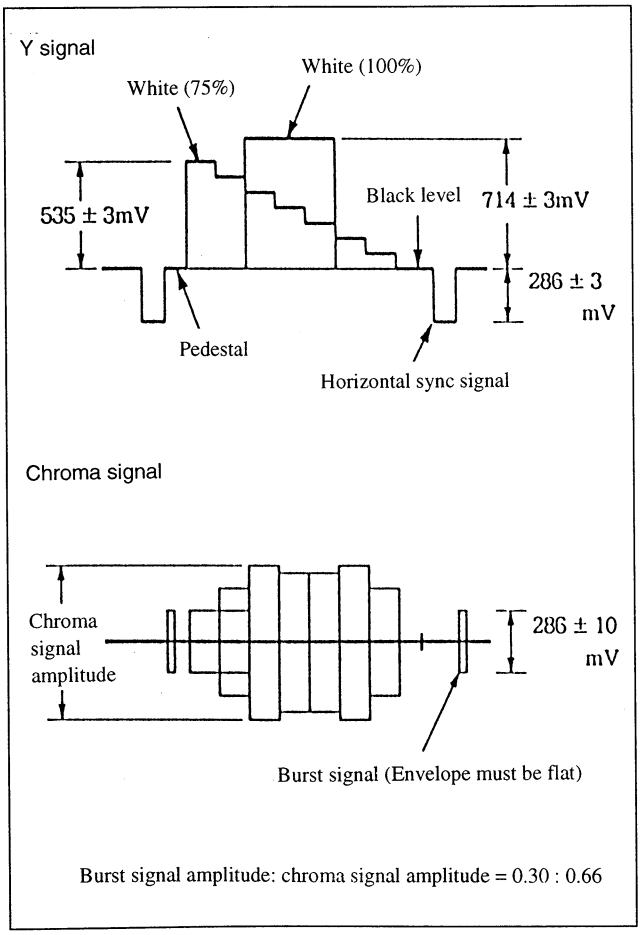


Fig. 7-2. Color bar signal from pattern generator

2. VIDEO Input Signal

Connect an oscilloscope to the video input connector and check that the sync signal has 286 mV, the video signal has 714 mV with setup level of 0 mV and the burst signal has 286 mV with flat envelope. Check that ratio of the bust signal and the "red" signal is 0.30 : 0.66.

The video signal (color bars) used in the adjustment are shown in Fig. 7-3.

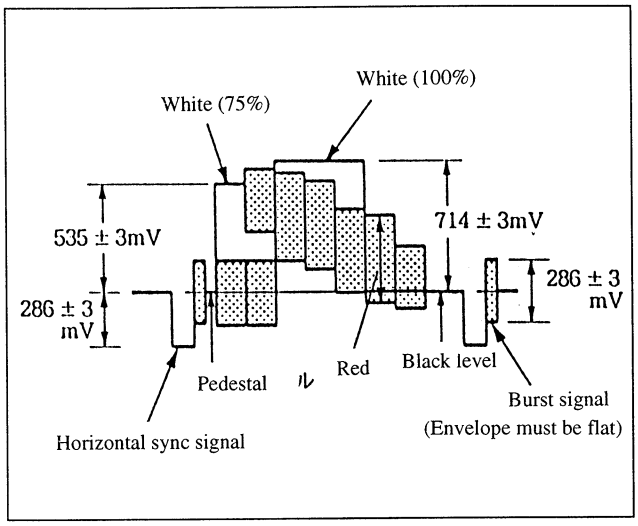


Fig. 7-3. Color bar signal from pattern generator (Across 75Ω termination)

2-1-4. Service Mode

1. Setting the service mode

The service mode consists of the adjustment mode which adjusts the EVR, and the test mode which shows the condition of the machine.

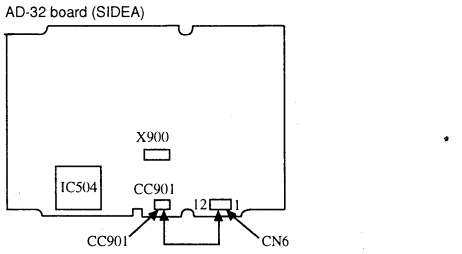
Preparation:

It is necessary to change LANC M to LANC S before connecting the adjustment remote commander RM-95 to LANC terminal.

Setting:

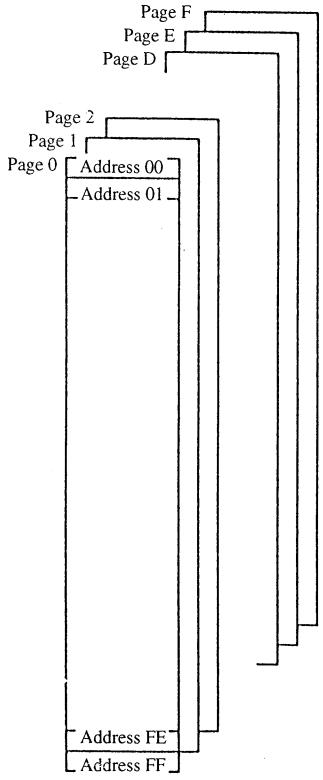
Connect CC901 on AD-32 board to ground (Pin-⑫ of CN6)

After adjustments, disconnect it.



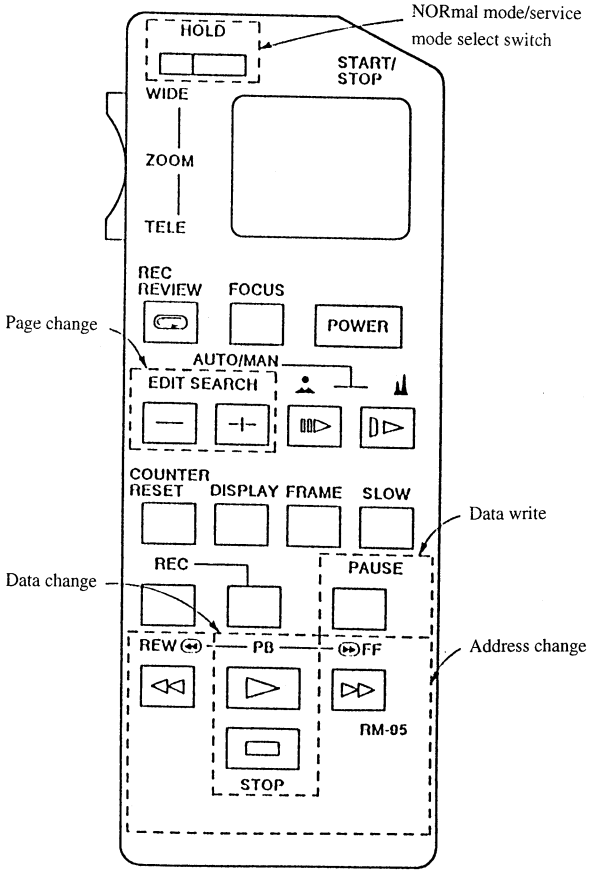
LCD Display of the Adjustment Remote Commander

2. Service LANC memory map

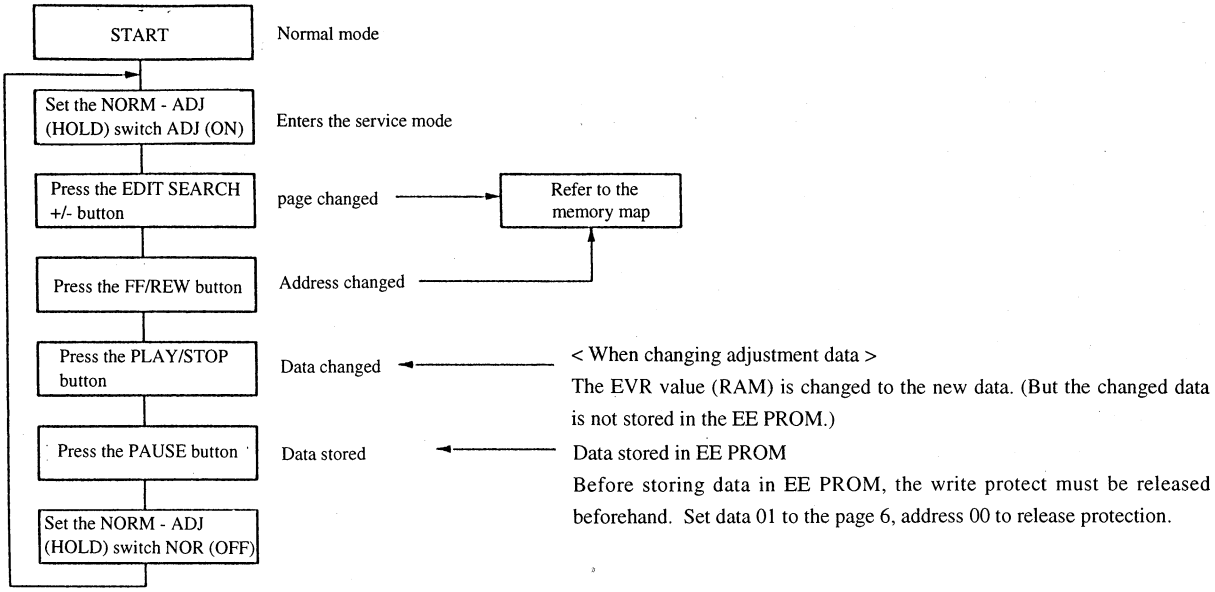


Page	Page allocation
0	
1	
2	
3	
4	
5	
6	Protect
7	Mode controller
8	Mechanism controller
9	
A	
B	
C	
D	
E	
F	EE-PROM

Adjustment remote commander RM-95 (J-6082-053-A)



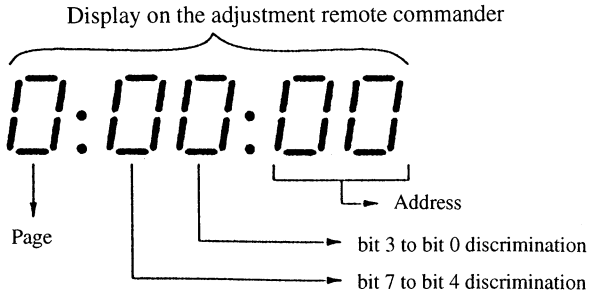
[Sequence of Service Mode Using the Adjustment Remote Commander]


START
Normal mode
Set the NORM - ADJ (HOLD) switch ADJ (ON)
Enters the service mode
Press the EDIT SEARCH +/- button
page changed
Refer to the memory map
Press the FF/REW button
Address changed
Press the PLAY/STOP button
Data changed
< When changing adjustment data >
The EVR value (RAM) is changed to the new data. (But the changed data is not stored in the EE PROM.)
Press the PAUSE button
Data stored
Data stored in EE PROM
Before storing data in EE PROM, the write protect must be released beforehand. Set data 01 to the page 6, address 00 to release protection.
Set the NORM - ADJ (HOLD) switch NOR (OFF)

Command Name	Command Function	Normal LANC Command
Page Up	Page +1	Edit Search +
Page Down	Page -1	Edit Search -
Address Up	Address +1	Fast Forward
Address Down	Address -1	Rewind
Data Up	Data +1	Playback
Data Down	Data -1	Stop
Store	Stores data in the EE PROM	Pause

3. Bit value discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for the following items. Use the table below to discriminate if the bit value is "1" or "0".



(example)

If the remote commander display is "8E", bit value from bit7 to bit4 can be discriminated from the column A, and those from bit3 to bit0 from column B.

	Display on the Adjustment remote Commander	Bit value			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ→	8	1	0	0	0
	9	1	0	0	1
	A (A)	1	0	1	0
	B (b)	1	0	1	1
	C (c)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ→	E (E)	1	1	1	0
	F (F)	1	1	1	1

4. Key input mode check

Page 7	Address 13

Data	Key input	Data	Key input	Data	Key input
00	No key input	0A	PRINT Q'TY (S408)	14	FIELD/FRAME (S307)
01	TEMPLATE (S403)	0B	PRINT CANCEL (S410)	15	PRINT (S306)
02	NEXT (S405)	0C	MEMORY RECALL (S304)		
03	EXEC (S407)	0D	LOWER (S308)		
04	SPLIT MODE (S409)	0E	STANDARD (S302)		
05	POSITION (S411)	0F	UPPER (S301)		
06	DISPLAY (S401)	13	SOURCE (S303)		

Operating procedure:

Order	Page	Address	Data	Procedure
1	7	13		The pressed key can be discriminated from the display data.

5. Downloading test pattern signal to memory

Page 7	Address 20

Operating procedure:

Order	Page	Address	Data	Procedure
1				Press [MEMORY] or [MEMORY RECALL] to select the memory picture mode
2	7	20	27, 29, 2F	Select a desired test pattern from the following table and set the selected data.
3	7	20		Press the PAUSE button of the adjustment remote commander. (note 1)

Note 1: Downloading the test pattern to memory requires 5 to 30 seconds.

Data	Test pattern
27	Gray picture
29	Stair step
2F	Color bars (Semi SMPTE)

Precaution for downloading to memory

1. Do not store any data other than the above data into memory.

6. Checking if communication with mechanism controller is normal

Page 8	Address 02

Display data	Communication status
01	Normal
Others	Abnormal

Operating procedure:

Order	Page	Address	Data	Procedure
1	8	02		If 01 appears, the serial data communication between the mode controller and mechanism controller is normal.

7. Mechanism controller A/D port check

Page 8	Address 08

Display data	A/D port input voltage check
00 to FF	About 0V dc to about 5V dc

Operating procedure:

Order	Page	Address	Data	Procedure
1	8	08		The input voltage to IC502 pin-⑤① (H TEMP) can be known from the displayed data.

8. Ribbon code read-out check

Page 7	Address 0A

Data	Ribbon type
*2	Y.M.C
*4	R.Y.M.C
*6	Y.M.C.O
*F	No ribbon

(*: Any number)

Operating procedure:

Order	Page	Address	Data	Procedure
1				Insert a ribbon (video print) to cartridge and close the ribbon door.
2	7	0A		The type of ribbon can be known from the displayed data after the ribbon motor is stopped. (after the ribbon cord is read-out)

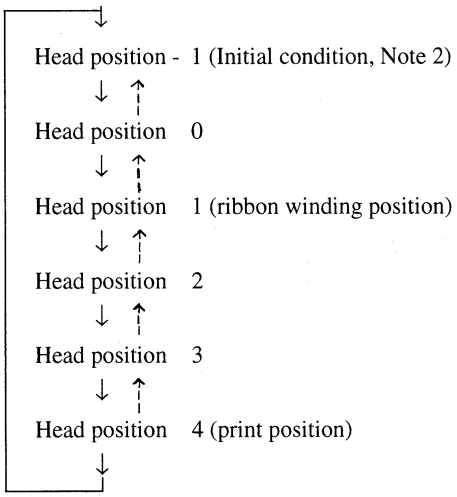
9. Head motor check

Page 8	Address 1A

Precaution: Prepare the machine setup so that the main power can be immediately turned off at any time, before starting this adjustment.

Data	Action
00	Stop
01	Head position UP (note 1)
02	Head position DOWN (note 1)

Note 1: Every pressing of the PAUSE button of the adjustment remote commander advances the head position one step after another.


Head position - 1 (Initial condition, Note 2)
Head position 0
Head position 1 (ribbon winding position)
Head position 2
Head position 3
Head position 4 (print position)

↓: Head position UP
↑: Head position DOWN

Note 2: If "Head position DOWN" is operated at the head position-1, the machine can be damaged. If "Head position DOWN" is operated at the head position-1, turn off the main power of the machine immediately.

Operating procedure:

Order	Page	Address	Data	Procedure
1				Close the ribbon door.
2	8	10	01	
3	8	1A		After setting the above data, press the PAUSE button. The head motor starts the specified action.

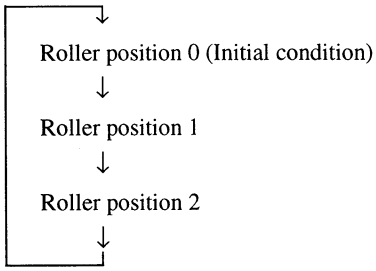
Note: After completing the check, be sure to turn off the main power once.

10. Ribbon motor (roller motor) check

Page 8	Address 1A

Data	Action
00	Stop
03	Roller position UP (note 1)
04	Ribbon winding (note 2)

Note 1: Every pressing of the PAUSE button of the adjustment remote controller advances the roller position one step after another.



Note 2: Ribbon is wound at the head position 1.

Operating procedure:

Order	Page	Address	Data	Procedure
1				Close the ribbon door.
2	8	10	01	
3	8	1A		After setting the data as shown above, press the PAUSE button of the adjustment remote commander.Then the ribbon motor (roller motor) starts the specified action.

Note: After completing the check, be sure to turn off the main power once.

11. Head control check

Page 8	Address 1A

Data	Action
00	Pre-heat stop
0A	Pre-heat

Operating procedure:

Order	Page	Address	Data	Procedure
1				Close the ribbon door.
2	8	10	01	
3	8	1A	0A	Press the PAUSE button of the adjustment remote commander.
4				Confirm that the thermal head temperature increases and fan motor rotates. Check also that the pulse having 15 mseconds cycle or a chain or pulse (5Vp-p) appears at AD-32 board CN005 pins-④, -⑧, -⑩.
5	8	1A	00	After confirming the machine operation, stop the pre-heat of the machine immediately.

Note: After completing the check, be sure to turn off the main power once.

12. Platen motor (stepping motor) check

Page 8	Address 1A

Data	Action
00	Stop
05	Forward rotation
06	Reverse rotation

Operating procedure:

Order	Page	Address	Data	Procedure
1				Close the ribbon door.
2	8	10	01	
3	8	1A		After setting the data as shown above, press the PAUSE button of the adjustment remote commander. Then the platen motor starts the specified action.

Note: After completing the check, be sure to turn off the main power once.

13. Fan motor check

Page 8	Address EB

Data	Action
08 to 0F	Rotation
00 to 07	Stop

Operating procedure:

Order	Page	Address	Data	Procedure
1	8	10	01	Close the ribbon door.
2	8	1B	FF	
3	8	EB		After setting the data as shown above, press the PAUSE button of the adjustment remote commander. Then the fan motor starts and stops.

Note: After completing the check, be sure to turn off the main power once.

14. Page F address list

Adjustment address	Name	Function Number in parenthesis ( ) indicates adjustment voltage output pin.	Adjustment data	
			Initial value	Memo column
00			00	00
01			00	00
02			00	00
03			00	00
04			FF	FF
05			FF	FF
06			00	00
07			00	00
08			00	00
09			00	00
0A			00	00
0B			00	00
0C			00	00
0D			00	00
0E			00	00
0F			00	00
10		Color level offset adjustment	35	80
11		AGC level adjustment	95	
12		Sync detection	B5	
13		Threshold level of super-impose	35	
14		White balance adjustment	60	FF
15		Y/C separation CHROMA level adjustment	85	FF
16		Y/C separation Y level adjustment	50	FF
17		White balance adjustment	4A	
18		Sync level adjustment	2A	
19		White balance adjustment	C5	00
1A		D/A REF adjustment	6A	
1B		HUE offset adjustment	9A	
1C				
1D				
1E				
1F				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				

Table 7-1 (1)

Adjustment address	Name	Function Number in parenthesis ( ) indicates adjustment voltage output pin.	Adjustment data	
			Initial value	Memo column
2A				
2B				
2C				
2D				
2E				
2F				

Table 7-1 (2)

Note 1: Use the adjustment data initial values in the case if the page F data is deleted by some reason. In such a case, input this data before starting the video circuit adjustment.

Note 2: The data indicated in the Memo column is the fixed data.
After completing the adjustment, confirm that these data are not replaced by other data by mistake.

2-2. POWER SUPPLY ADJUSTMENT

1. Power supply voltage check (AD-32 board)

Mode	Input picture
Measuring Instrument	Digital voltmeter
UNSWD 20 V voltage check	
Measuring Point	CN006 pin-⑧
Specification Value	20.0 ±0.3 Vdc
SWD 6.7 V check	
Measuring Point	CN006 pin-⑦
Specification Value	7.0 ±0.4 Vdc
ANALOG 6.7 V check	
Measuring Point	CN006 pin-④
Specification Value	7.1 ±0.2 Vdc
ACV UNREG voltage check	
Measuring Point	CN006 pin-⑨/pin-⑩
Specification Value	6.7 ±0.4 Vdc
UNSWD 5V check	
Measuring Point	CN006 pin-⑥
Specification Value	5.0 ±0.2 Vdc

2. ANALOG 6.7V voltage adjustment (Power supply block)

Mode	Input picture
Measuring Point	+: CN001 pin-④ - : CN001 pin-②
Measuring Instrument	Digital voltmeter
Adjusting Element	VR202
Specification Value	7.1 ±0.2 Vdc

3. Head Voltage Adjustment (Power Supply Block)

Before starting this adjustment, use the old head (note 1) or a normal machine and print the stair step pattern (note 2) two sheets successively. Use the second print as the sample of print density.

Note 1: The head trouble contents must be limited to black streaking or white streaking so that the entire head must not be damaged.

Note 2: Refer to "Downloading Test Pattern to Memory" (page 7-6) of section "2-1-4. Service Mode Operation" for details to use the test patterns.

Mode	Memory picture (note 1)
Signal	Test pattern (stair step)
Measuring Point	+: CN001 pin-⑧ (UNSWD +20V) - : CN001 pin-12 (GND)
Measuring Instrument	VR201
Adjustment Element	Digital voltmeter
Specification Value	Printed density must be same as the sample.

Note 1: Press the [MEMORY] or [MEMORY RECALL] button to select the memory picture.

Adjustment procedure:

1) Select page 7, address 20, and set data 29. Press the PAUSE button of the adjustment remote commander.
   (This step is to store the test pattern (stair step) into memory.)
2) Set 2 sheets of print number from the menu display. Press [PRINT] button to print the stair step pattern two sheets successively.
3) Compare the second printing with the sample. If print density is different from the sample, adjust the print density as follows:
4) Adjust VR201 according to the print density.
   If print is thicker than the sample: Decrease the head voltage
   If print is thinner than the sample: Increase the head voltage
5) Print the stair step pattern two sheets successively.
6) Compare the second printing with the sample. If print density is different from the sample, repeat the steps 3 to 6.

Note: For the adjustment of second time and later, printing of only one sheet is enough.

Stair step pattern

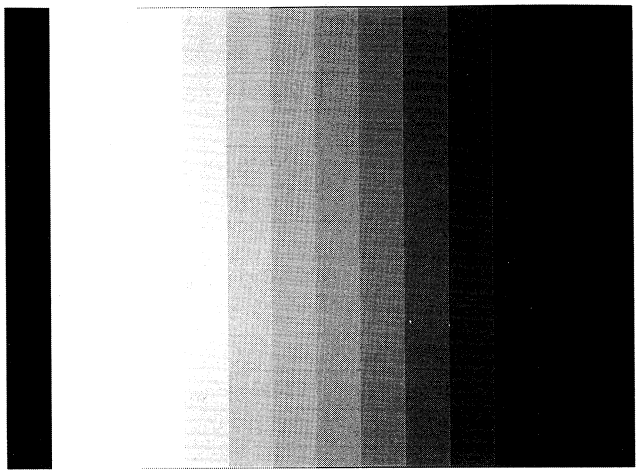


Fig. 7-4

2-3. VIDEO CIRCUIT ADJUSTMENT

1. Page F initial value input

If the page F data is lost by the replacement of EEPROM (AD-32 board IC903) or some other reasons, input the page F initial value before starting the video circuit adjustment. Refer to section "2-1-4. Service Mode", "Page F Address List" (page 7-11) for the initial value.

Mode	Input picture
Signal	Any signal
Adjustment Page	F
Adjustment Address	00 to 2B

Input procedure:

1) Release protection as follows:
   Page: 6, address: 00, data: 01

2) Select the page F and input the initial value to every address. (Whenever data (initial value) is input to each item, press the PAUSE button of the adjustment remote commander before changing address to the next address.)

2. Sync detection level adjustment (AD-32 board)

Mode	Input picture
Signal	Color bar (S VIDEO input)
Measuring Point	IC101 pin-⑦
Measuring Instrument	Digital voltmeter
Adjustment Page	F
Adjustment Address	12 (EVR SYNC DET VR)
Specification Value	2.0 ±0.1V

Adjustment procedure:

1) Release protection as follows:
   Page: 6, address: 00, data: 01

2) Select page: F, address: 12 and change data until IC101 pin-⑦ voltage reaches the specified voltage.

3) Press the PAUSE button of the adjustment remote commander.

3. Free run frequency adjustment (AD-32 board)

Mode	Input picture
Signal	Color bar (S VIDEO input) (note 1)
Measuring Point	IC102 pin-⑭
Measuring Instrument	Frequency counter
Adjustment Element	CT200
Specification Value	14.308180 MHz

Note 1: Connect IC200 pin-⑤ and GND with 1μF capacitor. (This removes the chroma signal.)

Adjustment procedure:

1) Connect J101, CN001 pins-⑩ and -⑫ to GND.
2) Connect IC200 pin-⑦ and GND with 1MΩ resistor.
3) Adjust CT200 until the frequency at IC102 pin-⑭ satisfies the specification.

4. 910fH adjustment (AD-32 board)

Mode	Input picture
Signal	Color bar (S VIDEO input)
Measuring Point	IC403 pin-⑪
Measuring Instrument	Digital voltmeter
Adjustment Element	CT404
Specification Value	2.50 ±0.1 Vp-p

Adjustment procedure:

1) Adjust CT404 until the voltage at IC403 pin-⑪ satisfies the specification.

5. AGC level adjustment (AD-32 board)

Mode	Input picture
Signal	Color bar (S VIDEO input)
Measuring Point	IC612 pin-⑬
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	11
Specification Value	A = 1.80 ±0.05 Vp-p

Adjustment procedure:

1) Release protection as follows:
   Page: 6, address: 00, data: 01
2) Select page: F, address: 11 and change data until peak white 100% level (A) satisfies the specification.
3) Press the PAUSE button of the adjustment remote commander.

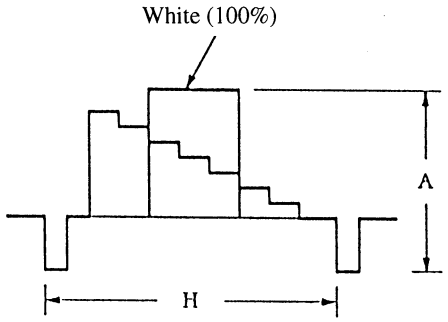


Fig. 7-5

6. V REF adjustment (AD-32 board)

Mode	Input picture (note 1)
Signal	Test pattern (Stair step)
Measuring Point	IC612 pin-⑫
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	1A
Specification Value	A = 2.0 ±0.03 Vp-p

Note 1: Press [MEMORY] or [MEMORY RECALL] button to select the memory picture.

Adjustment procedure:

1) Release protection as follows:
   Page: 6, address: 00, data: 01
2) Select page: 7, address: 20 and set data 29 and press the PAUSE button of the adjustment remote commander. (This stores the test pattern (stair step) into memory.)
3) Select page: F, address: 1A and change data until the signal amplitude (A) satisfies the specification.
4) Press the PAUSE button of the adjustment remote commander.

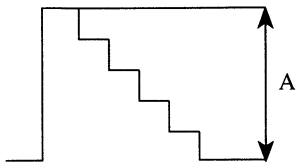


Fig. 7-6

7. Y/C separation Y level adjustment (AD-32 board)

Mode	Input picture
Signal	Color bar (VIDEO input) (note 1)
Measuring Point	IC612 pin-⑬
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	16
Specification Value	A = 1.80 ±0.03 Vp-p

Note 1: Remove the input signal cable from the S VIDEO connector.

Adjustment procedure:

1) Release protection as follows:
   Page: 6, address: 00, data: 01
2) Select page: F, address: 16 and change data until peak white 100% level (A) satisfies the specification.
3) Press the PAUSE button of the adjustment remote commander.

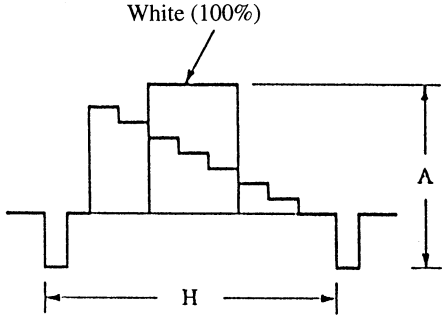


Fig. 7-7

8. Y/C separation CHROMA level adjustment (AD-32 board)

Mode	Input picture
Signal	Color bar (VIDEO input) (note 1)
Measuring Point	IC104 pin-③
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	15 (EVR Y/C-C)
Specification Value	A = 286 ±30 mVp-p

Note 1: Remove the input signal cable from the S VIDEO connector.

Adjustment procedure:

1) Release protection as follows:
   Page: 6, address: 00, data: 01
2) Select page: F, address: 15 and change data until burst signal level (A) satisfies the specification.
3) Press the PAUSE button of the adjustment remote commander.

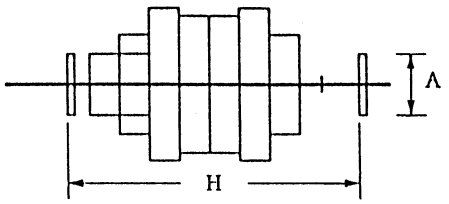


Fig. 7-8

9. Color level offset adjustment1 (AD-32 board)

Mode	Input picture
Signal	Color bar (S VIDEO input)
Measuring Point	J101 (monitor output)
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	10
Specification Value	Spots stay within the specified "⊞" zone

Adjustment procedure:

1) Release protection as follows:
   Page: 6, address: 00, data: 01
2) Select page: F, address: 10 and change data until each spot stays within the specified "⊞" zone.
3) Press the PAUSE button of the adjustment remote commander.

10. HUE level offset adjustment1 (AD-32 board)

Mode	Input picture
Signal	Color bar (S VIDEO input)
Measuring Point	J101 (monitor output)
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	1B
Specification Value	Spots stay within the specified "⊞" zone

Adjustment procedure:

1) Release protection as follows:
   Page: 6, address: 00, data: 01
2) Select page: F, address: 1B and change data until each spot stays within the specified "⊞" zone.
3) Press the PAUSE button of the adjustment remote commander.

11. White balance adjustment (AD-32 board)

Mode	Input picture
Signal	Color bar (S VIDEO input)
Measuring Point	CL307, CL308
Measuring Instrument	Oscilloscope (DC mode)
Adjustment Page	F
Adjustment Address	17, 19, 14
Specification Value	See Fig. 7-9 to Fig. 7-11.

Adjustment procedure:

1) Release protection as follows:
   Page: 6, address: 00, data: 01
2) Connect an oscilloscope to CL307 (the point where IC302 pin-② is connected via C327).
3) Select page: F, address: 17 and change data until DC level of pedestal has the same DC level as that of peak white as shown.

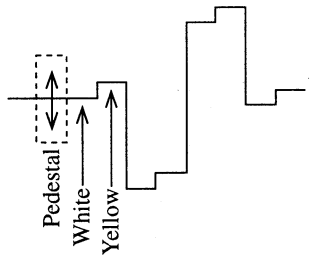


Fig. 7-9

4) Connect an oscilloscope to CL308 (the point where IC302 pin-③ is connected via C328).
5) Select page: F, address: 19 and change data until DC level of pedestal has the same DC level as that of peak white as shown.

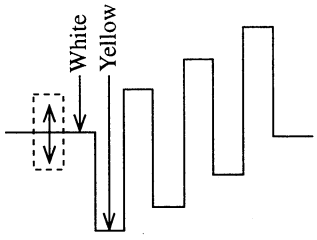


Fig. 7-10

6) Connect an oscilloscope to CL307.
7) Connect IC612 pin-⑨ to GND.
8) Select page: F, address: 14 and change data until DC level of pedestal has the same DC level as that of peak white as shown.

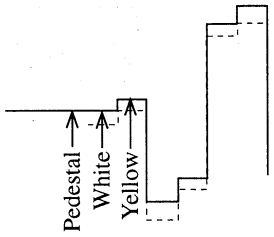


Fig. 7-11

9) Repeat steps from 2) to 8).
10) Press the PAUSE button of the adjustment remote commander.

12. Color level, HUE level offset adjustment 2 (AD-32 board)

Mode	Input picture
Signal	Color bar (S VIDEO input)
Measuring Point	J101 (monitor output), IC612 pin-③
Measuring Instrument	Vectorscope, oscilloscope
Adjustment Page	F
Adjustment Address	10, 1B
Specification Value	Spots stay within the specified "⊞" zone A = 1.80 ±0.03 Vp-p

Adjustment procedure:

1) Release protection as follows:
   Page: 6, address: 00, data: 01
2) Connect a vectorscope to J101.
3) Select page: F then address: 10 and 1B alternately. Change data of the address 10 and 1B alternately until each spot stays within the specified "⊞" zone. (Three spots out of six spots must stay within their "⊞" zone.)
4) Connect an oscilloscope to IC612 pin-③.
5) Select page: F, address: 10 and change data until R-Y signal level (A) satisfies the specification.

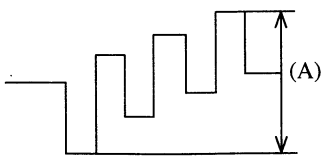


Fig. 7-12

6) Press the PAUSE button of the adjustment remote commander.

13. Sync level adjustment (AD-32 board)

Mode	Input picture
Signal	Color bar (S VIDEO input)
Measuring Point	J101 (monitor output)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	18
Specification Value	A = 286 ±40 mVp-p

Adjustment procedure:

1) Release protection as follows:
   Page: 6, address: 00, data: 01
2) Select page: F, address: 18 and change data until sync signal level (A) satisfies the specification.
3) Press the PAUSE button of the adjustment remote commander.

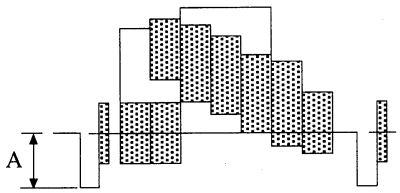
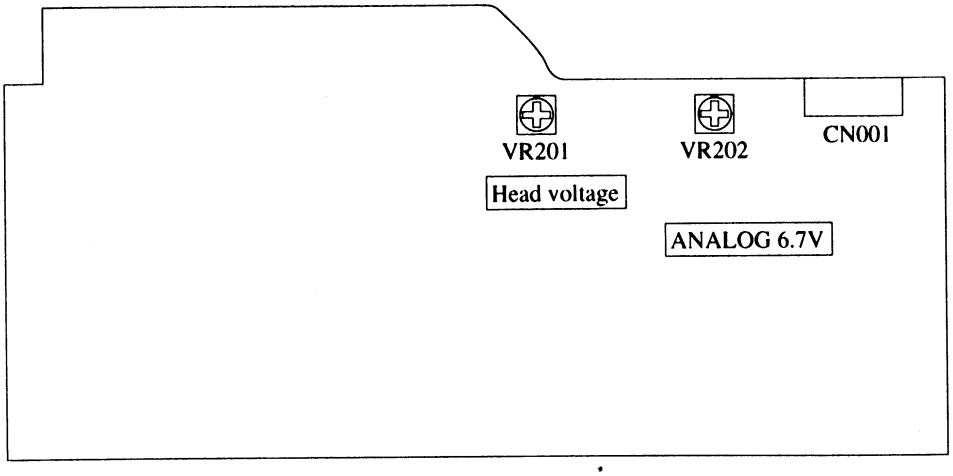


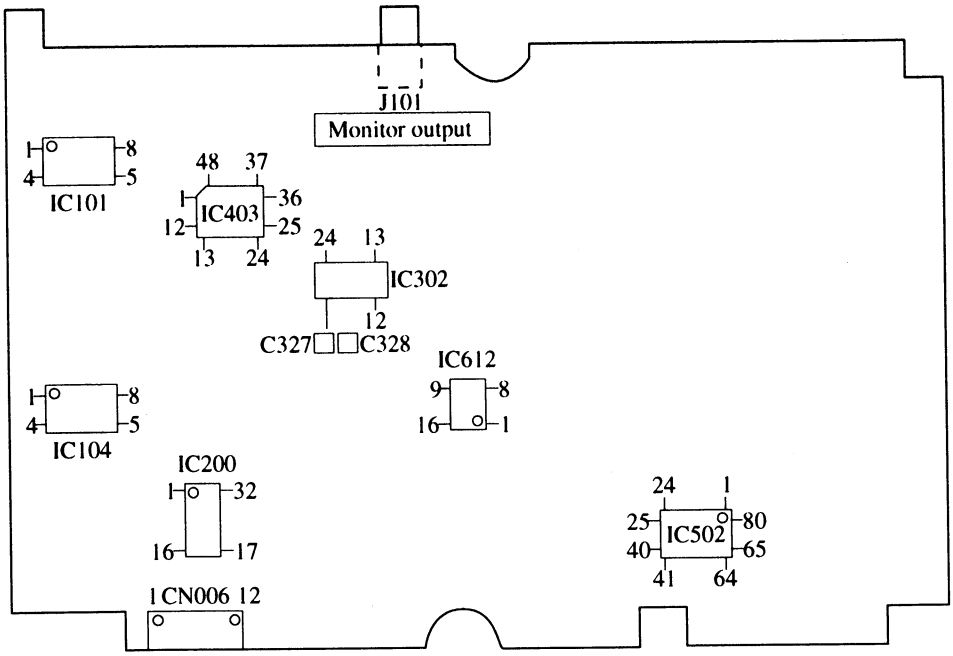
Fig. 7-13

2-4. LAYOUT DIAGRAMS FOR ADJUSTMENT RELATED PARTS

POWER BOARD (COMPONENT SIDE)



AD-32 BOARD (CONDUCTOR SIDE)



AD-32 BOARD (COMPONENT SIDE)